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Scientific and Technical Information Center  
SEARCH REQUEST FORM

Requester's Full Name: Jeff Fredman Examiner #: 72610 Date: 4/1/05  
Art Unit: 1637 Phone Number: 2-0742 Serial Number: 10/122 09/700 072  
Location (Bldg/Room#): Roma (Mailbox #): \_\_\_\_\_ Results Format Preferred (circle): PAPER DISK  
\*\*\*\*\*

To ensure an efficient and quality search, please attach a copy of the cover sheet, claims, and abstract or fill out the following: MEJ

Title of Invention: \_\_\_\_\_

Inventors (please provide full names): \_\_\_\_\_

Earliest Priority Date: \_\_\_\_\_

Search Topic:  
Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc., if known.

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

Please Search IB w/ each of the 2 groups.

Thanks,  
Jeff

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APR 12 2005  
(STIC)

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STAFF USE ONLY	Type of Search	Vendors and cost where applicable
Searcher: _____	_____ NA Sequence (#)	<u>754.92</u> STN _____ Dialog
Searcher Phone #: _____	_____ AA Sequence (#)	_____ Questel/Orbit _____ Lexis/Nexis
Searcher Location: _____	_____ Structure (#)	_____ Westlaw _____ WWW/Internet
Date Searcher Picked Up: _____	_____ Bibliographic	_____ In-house sequence systems
Date Completed: <u>4/20</u>	_____ Litigation	_____ Commercial _____ Oligomer _____ Score/Length
Searcher Prep & Review Time: <u>30</u>	_____ Fulltext	_____ Interference _____ SPDI _____ Encode/Transl
Online Time: <u>60</u>	_____ Other	_____ Other (specify)

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L14 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2000:646079 HCAPLUS  
 DOCUMENT NUMBER: 133:239376  
 ENTRY DATE: Entered STN: 15 Sep 2000  
 TITLE: Laser-compatible NIR marker dyes  
 INVENTOR(S): Czerney, Peter; Lehmann, Frank  
 PATENT ASSIGNEE(S): Dyomics, Germany  
 SOURCE: PCT Int. Appl., 33 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 INT. PATENT CLASSIF.:  
 MAIN: C09B023-02  
 SECONDARY: C09B023-10; G01N033-58  
 CLASSIFICATION: 41-11 (Dyes, Organic Pigments, Fluorescent  
 Brighteners, and Photographic Sensitizers)  
 Section cross-reference(s): 9  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

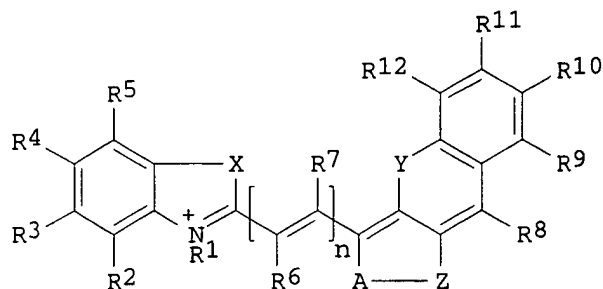
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000053678	A1	20000914	WO 2000-DE802	20000309
W: DE, US				
DE 19911421	A1	20001005	DE 1999-19911421	19990311
PRIORITY APPLN. INFO.:			DE 1999-19911421	A 19990311

## PATENT CLASSIFICATION CODES:

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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WO 2000053678	ICM	C09B023-02
	ICS	C09B023-10; G01N033-58
DE 19911421	ECLA	C09B023/02; C09B023/10
OTHER SOURCE(S):		MARPAT 133:239376

GRAPHIC IMAGE:



## ABSTRACT:

The aim of the invention is to provide NIR-marker polymethine dyes such as I (R1-R12 = H, organic group, OH, ionizable group; X, Y = O, S, Se, imino, dialkylmethylene; A, Z = H; AZ together may form an aliphatic, heteroaliph., lactone, or thiolactone linkage; n = 1-3) with high photochem. and storage stability as well as high fluorescence yield, in which fluorescence can be

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excited as simply as possibly by means of laser radiation in the visible or NIR spectral range. Thus, 3-(diethylamino)-6-(ethoxymethylene)-7,8,9,10-tetrahydro-6H-(5-oxoniacyclohepta[b]naphthalene) perchlorate was prepared and converted to 3-(diethylamino)-6-[2-[1-(5-carboxypentyl)-3,3-dimethyl-5-sulfonato-1,3-dihydro-2-indolylidenyl]ethylidene]-7,8,9,10-tetrahydro-6H-(5-oxoniacyclohepta[b]naphthalene) betaine. This compound after esterification with N-hydroxysuccinimide could be used to label human serum albumin.

SUPPL. TERM: fluorescent near IR dye biomarker..prodn  
INDEX TERM: Fluorescent dyes  
Fluorescent dyes  
(cyanine; production of laser-compatible NIR fluorescent biomarker dyes)  
INDEX TERM: Cyanine dyes  
Cyanine dyes  
(fluorescent; production of laser-compatible NIR fluorescent biomarker dyes)  
INDEX TERM: Cyanine dyes  
(near-IR-absorbing; production of laser-compatible NIR fluorescent biomarker dyes)  
INDEX TERM: Fluorescent indicators  
(production of laser-compatible NIR fluorescent biomarker dyes)  
INDEX TERM: 293320-49-7P  
ROLE: BUU (Biological use, unclassified); IMF (Industrial manufacture); TEM (Technical or engineered material use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(dye; production of laser-compatible NIR fluorescent biomarker dyes).  
INDEX TERM: 293320-32-8P 293320-34-0P  
293320-46-4P 293320-47-5P  
293320-51-1P  
ROLE: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(dye; production of laser-compatible NIR fluorescent biomarker dyes)  
INDEX TERM: 293320-36-2P 293320-38-4P  
293320-40-8P 293320-42-0P  
293320-44-2P 293320-45-3P  
293320-48-6P 293320-53-3P  
ROLE: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(dye; production of laser-compatible NIR fluorescent biomarker dyes)  
INDEX TERM: 122-51-0, Triethyl orthoformate 1497-49-0  
6066-82-6, N-Hydroxysuccinimide 20205-30-5  
21016-25-1 28140-60-5 89992-70-1  
, 2-Cyanoethyl N,N-diisopropylchlorophosphoramidite  
146368-08-3 182873-70-7  
193824-32-7 198422-72-9  
203525-41-1 293320-55-5  
ROLE: RCT (Reactant); RACT (Reactant or reagent)  
(starting material; production of laser-compatible NIR fluorescent biomarker dyes)  
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD.  
REFERENCE(S): (1) Glazer; US 5760201 A 1998 HCAPLUS

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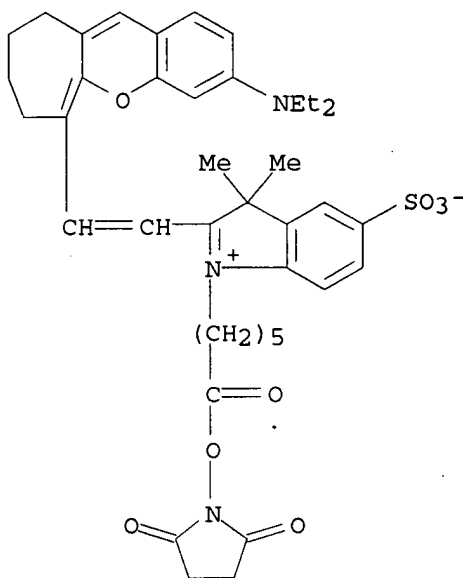
- (2) Hiroyuki, N; CHEMICAL REVIEWS 1992, P1197  
(3) Hyperion Inc; WO 9641144 A 1996 HCAPLUS  
(4) Molecular Probes Inc; WO 9424213 A 1994 HCAPLUS  
(5) Molecular Probes Inc; WO 9613552 A 1996 HCAPLUS  
(6) Univ Carnegie Mellon; DE 3912046 A 1990 HCAPLUS

IT 293320-49-7P

RL: BUU (Biological use, unclassified); IMF (Industrial manufacture); TEM (Technical or engineered material use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(dye; production of laser-compatible NIR fluorescent biomarker dyes)

RN 293320-49-7 HCAPLUS

CN 3H-Indolium, 2-[2-[3-(diethylamino)-7,8,9,10-tetrahydrobenzo[b]cyclohepta[e]pyran-6-yl]ethenyl]-1-[6-[(2,5-dioxo-1-pyrrolidinyl)oxy]-6-oxohexyl]-3,3-dimethyl-5-sulfo-, inner salt (9CI) (CA INDEX NAME)



IT 293320-32-8P 293320-34-0P 293320-46-4P  
293320-47-5P 293320-51-1P

RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(dye; production of laser-compatible NIR fluorescent biomarker dyes)

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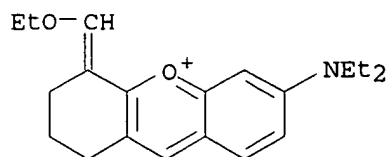
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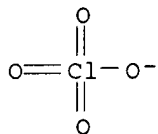




CM 2

CRN 14797-73-0

CMF C1 O4



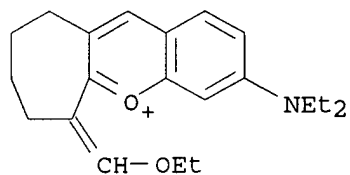
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CN 6H-Benzo[b]cyclohepta[e]pyrylium, 3-(diethylamino)-6-(ethoxymethylene)-7,8,9,10-tetrahydro-, perchlorate (9CI) (CA INDEX NAME)

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CRN 293320-33-9

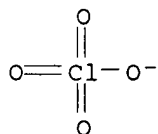
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CM 2

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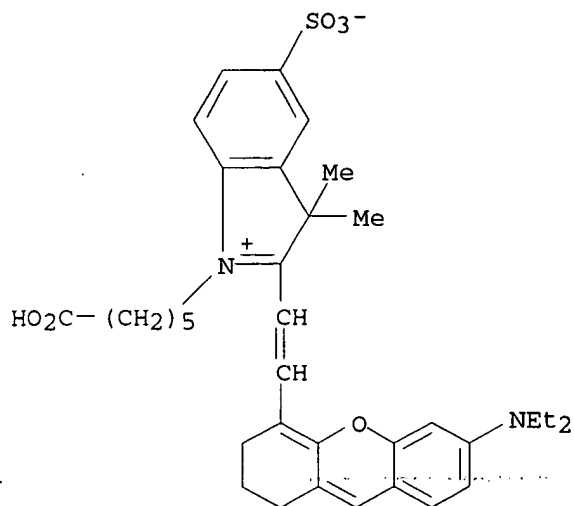
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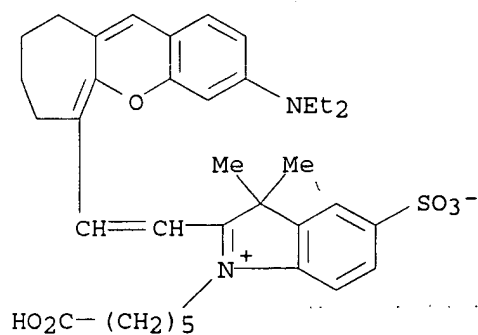
CN 3H-Indolium, 1-(5-carboxypentyl)-2-[2-[6-(diethylamino)-2,3-dihydro-1H-xanthen-4-yl]ethenyl]-3,3-dimethyl-5-sulfo-, inner salt (9CI) (CA INDEX NAME)

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RN 293320-47-5 HCAPLUS

CN 3H-Indolium, 1-(5-carboxypentyl)-2-[2-[3-(diethylamino)-7,8,9,10-tetrahydrobenzo[b]cyclohepta[e]pyran-6-yl]ethenyl]-3,3-dimethyl-5-sulfo-, inner salt (9CI) (CA INDEX NAME)



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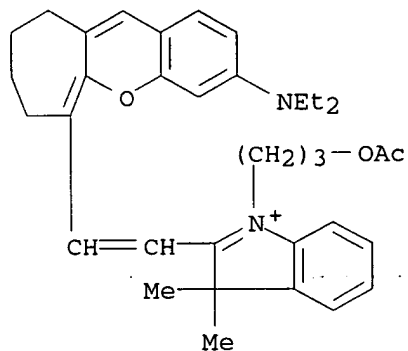
CN 3H-Indolium, 1-[3-(acetyloxy)propyl]-2-[2-[3-(diethylamino)-7,8,9,10-tetrahydrobenzo[b]cyclohepta[e]pyran-6-yl]ethenyl]-3,3-dimethyl-, perchlorate (9CI) (CA INDEX NAME)

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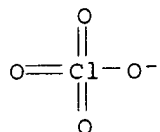
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CRN 14797-73-0

CMF Cl O4



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 293320-48-6P 293320-53-3P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (dye; production of laser-compatible NIR fluorescent biomarker dyes)

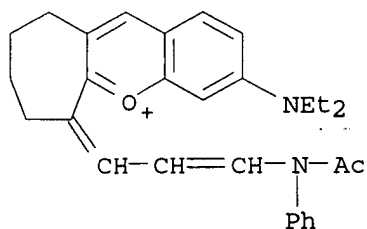
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CN 6H-Benzo[b]cyclohepta[e]pyrylium, 6-[3-(acetylphenylamino)-2-propenylidene]-3-(diethylamino)-7,8,9,10-tetrahydro-, perchlorate (9CI)  
 (CA INDEX NAME)

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CRN 293320-35-1

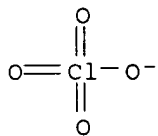
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CM 2

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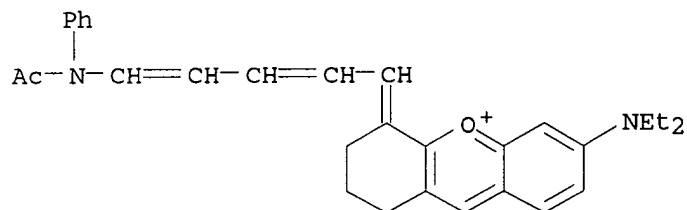
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CMF C1 O4



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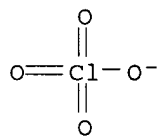
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CMF C30 H33 N2 O2



CM 2

CRN 14797-73-0  
CMF C1 O4



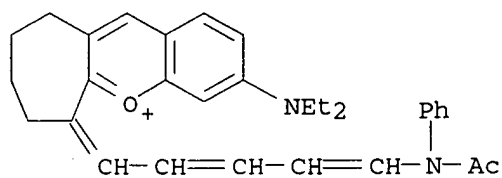
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CN 6H-Benzo[b]cyclohepta[e]pyrylium, 6-[5-(acetylphenylamino)-2,4-pentadienylidene]-3-(diethylamino)-7,8,9,10-tetrahydro-, perchlorate (9CI) (CA INDEX NAME)

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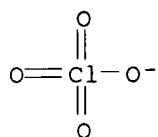




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CRN 14797-73-0

CMF C1 O4



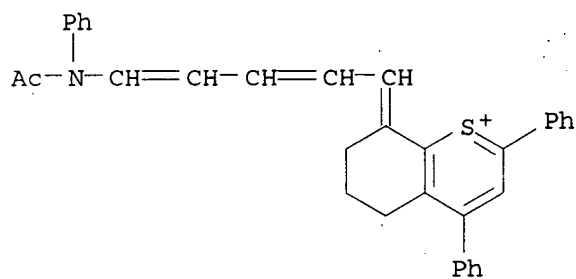
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CN 1-Benzothiopyrylium, 8-[5-(acetylphenylamino)-2,4-pentadienylidene]-  
5,6,7,8-tetrahydro-2,4-diphenyl-, perchlorate (9CI) (CA INDEX NAME)

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CRN 293320-41-9

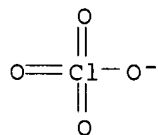
CMF C34 H30 N O S



CM 2

CRN 14797-73-0

CMF C1 O4

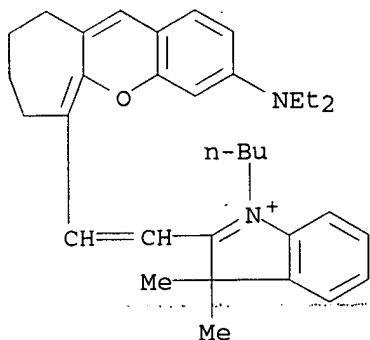


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RN 293320-44-2 HCAPLUS  
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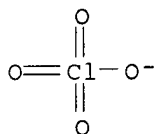
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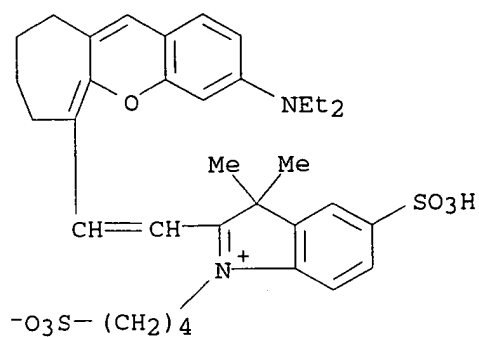
CM 2

CRN 14797-73-0  
 CMF Cl O4



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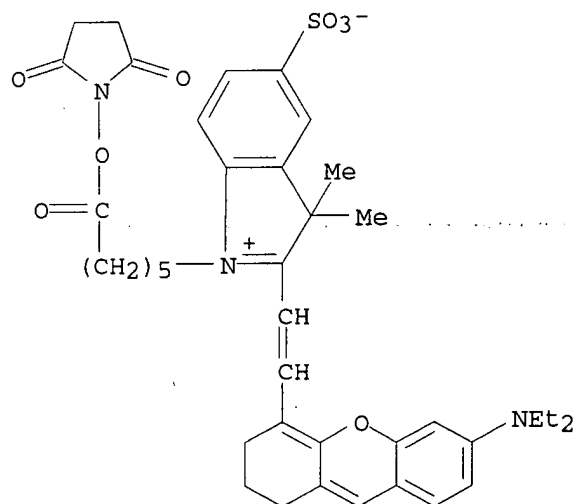
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RN 293320-53-3 HCAPLUS

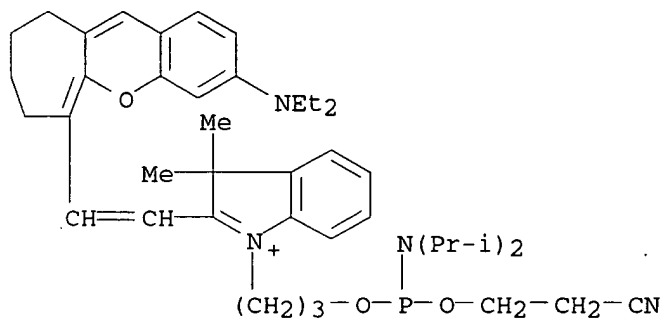
CN 3H-Indolium, 1-[3-[[[bis(1-methylethyl)amino](2-cyanoethoxy)phosphino]oxy]propyl]-2-[2-[3-(diethylamino)-7,8,9,10-tetrahydrobenzo[b]cyclohepta[e]pyran-6-yl]ethenyl]-3,3-dimethyl-, perchlorate (9CI) (CA INDEX NAME)

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CRN 293320-52-2

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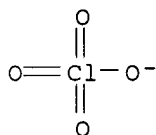
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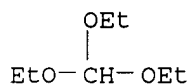
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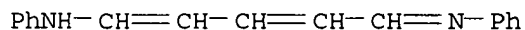
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 21016-25-1 28140-60-5 89992-70-1, 2-Cyanoethyl  
 N,N-diisopropylchlorophosphoramidite 146368-08-3  
 182873-70-7 193824-32-7 198422-72-9  
 203525-41-1 293320-55-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (starting material; production of laser-compatible NIR fluorescent  
 biomarker dyes)  
 RN 122-51-0 HCAPLUS  
 CN Ethane, 1,1',1''-[methylidynetris(oxy)]tris- (9CI) (CA INDEX NAME)



RN 1497-49-0 HCAPLUS  
 CN Benzenamine, N-[5-(phenylamino)-2,4-pentadienylidene]-, monohydrochloride  
 (9CI) (CA INDEX NAME)



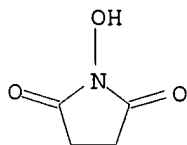
● HCl

RN 6066-82-6 HCAPLUS

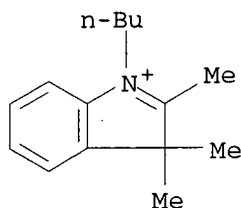
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CN 2,5-Pyrrolidinedione, 1-hydroxy- (9CI) (CA INDEX NAME)



RN 20205-30-5 HCAPLUS  
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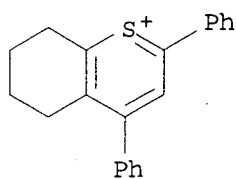


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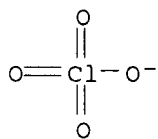
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CM 2

CRN 14797-73-0  
CMF Cl 04



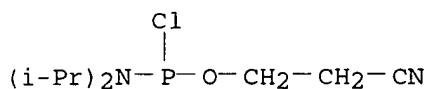
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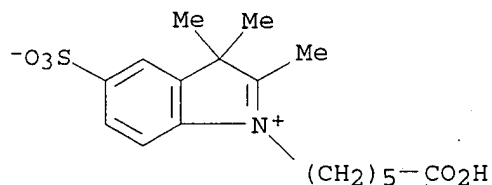
CN Benzenamine, N-[3-(phenylamino)-2-propenylidene]-, monohydrochloride (9CI)  
(CA INDEX NAME)

● HCl

RN 89992-70-1 HCAPLUS

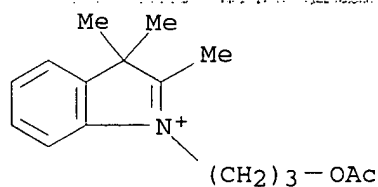
CN Phosphoramidochloridous acid, bis(1-methylethyl)-, 2-cyanoethyl ester  
(9CI) (CA INDEX NAME)

RN 146368-08-3 HCAPLUS

CN 3H-Indolium, 1-(5-carboxypentyl)-2,3,3-trimethyl-5-sulfo-, inner salt  
(9CI) (CA INDEX NAME)

RN 182873-70-7 HCAPLUS

CN 3H-Indolium, 1-[3-(acetyloxy)propyl]-2,3,3-trimethyl-, iodide (9CI) (CA INDEX NAME)

● I<sup>-</sup>

RN 193824-32-7 HCAPLUS

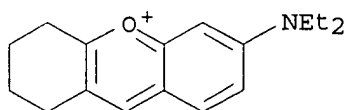
CN Xanthylum, 6-(diethylamino)-1,2,3,4-tetrahydro-, perchlorate (9CI) (CA INDEX NAME)

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CM 1

CRN 193824-31-6

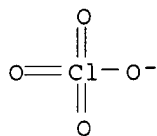
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CM 2

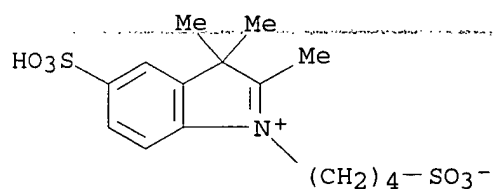
CRN 14797-73-0

CMF Cl O4



RN 198422-72-9 HCAPLUS

CN 3H-Indolium, 2,3,3-trimethyl-5-sulfo-1-(4-sulfobutyl)-, inner salt, potassium salt (9CI) (CA INDEX NAME)



● K

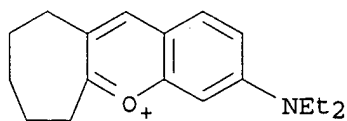
RN 203525-41-1 HCAPLUS

CN 6H-Benzo[b]cyclohepta[e]pyrylium, 3-(diethylamino)-7,8,9,10-tetrahydro-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 203525-40-0

CMF C18 H24 N O

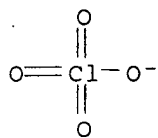


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CM 2

CRN 14797-73-0

CMF Cl O4



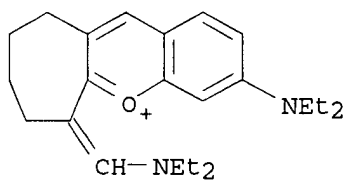
RN 293320-55-5 HCAPLUS

CN 6H-Benzo[b]cyclohepta[e]pyrylium, 3-(diethylamino)-6-  
[(diethylamino)methylene]-7,8,9,10-tetrahydro-, perchlorate (9CI) (CA  
INDEX NAME)

CM 1

CRN 293320-54-4

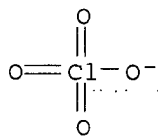
CMF C23 H33 N2 O



CM 2

CRN 14797-73-0

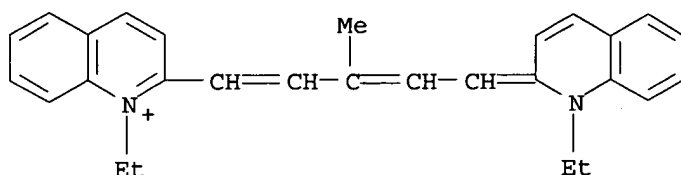
CMF Cl O4



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CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-3-methyl-1,3-pentadienyl]-, radical ion(1+) (9CI) (CA INDEX NAME)

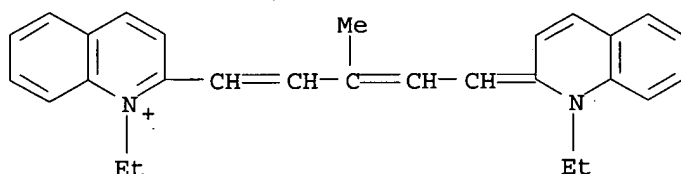


IT 97559-15-4

RL: RCT (Reactant); RACT (Reactant or reagent)  
(oxidation and dimerization of)

RN 97559-15-4 HCAPLUS

CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-3-methyl-1,3-pentadienyl]- (9CI) (CA INDEX NAME)



L29 ANSWER 50 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1987:157950 HCAPLUS

DOCUMENT NUMBER: 106:157950

TITLE: Calculation of the electronic structure of organic conjugated molecules

AUTHOR(S): Wang, Jiazhen; Han, Zhansheng; Tang, Yingwu; Song, Xinqi

CORPORATE SOURCE: Dep. Chem. Chem. Eng., Qinghua Univ., Beijing, Peop. Rep. China

SOURCE: Gaodeng Xuexiao Huaxue Xuebao (1986), 7(7), 629-33  
CODEN: KTHPDM; ISSN: 0251-0790

DOCUMENT TYPE: Journal

LANGUAGE: Chinese

AB A set of exptl. parameters was selected for the PPP method by resonance theory of mol. structure. The electronic levels and the lowest excitation energy of triplet state of several organic conjugated mols. as well as the half-wave potential of some cyanine sensitizing dyes were evaluated using the PPP and CNDO/2 methods.

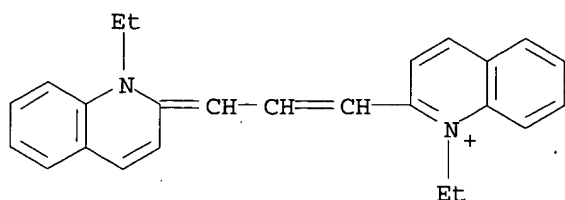
IT 605-91-4 14187-31-6

RL: MSC (Miscellaneous)

(dyes, electronic structure of, calcn. of, by CNDO/2 and PPP methods)

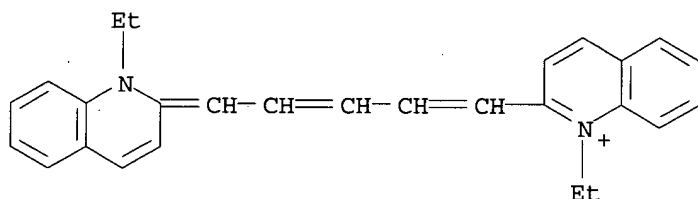
RN 605-91-4 HCAPLUS

CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-, iodide (9CI) (CA INDEX NAME)

● I<sup>-</sup>

RN 14187-31-6 HCAPLUS

CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)

● I<sup>-</sup>

L29 ANSWER 51 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1986:516532 HCAPLUS

DOCUMENT NUMBER: 105:116532

TITLE: Nature of the absorption band of cyanine dyes with three terminal groups

AUTHOR(S): Briks, Yu. L.; Kachkovskii, A. D.; Tolmachev, A. I.

CORPORATE SOURCE: Inst. Org. Khim., Kiev, USSR

SOURCE: Ukrainskii Khimicheskii Zhurnal (Russian Edition) (1985), 51(11), 1198-203

CODEN: UKZHAU; ISSN: 0041-6045

DOCUMENT TYPE: Journal

LANGUAGE: Russian

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The title dyes (I; X = S, CMe<sub>2</sub>, NPh, CH:CH) were prepared by heating heterocyclic quaternary salts containing a 2-Me group with HC(CHO)<sub>3</sub> in Ac<sub>2</sub>O containing NaOAc or with formyldicarbocyanines (II) in Ac<sub>2</sub>O. Similarly, II with 4-methyl(thia)pyrylium salts gave III (X<sub>1</sub> = O, S). In the sym. trinuclear dyes, 2 degenerative electron transitions occurred and appeared as a single, broad absorption band. In the unsym. dyes degeneration was

reduced and 2 clearly defined absorption maximum were observed in the long wavelength region.

IT 104259-41-8

RL: RCT (Reactant); RACT (Reactant or reagent)

(condensation reaction of, with pyrylium salt, cyanine dye from)

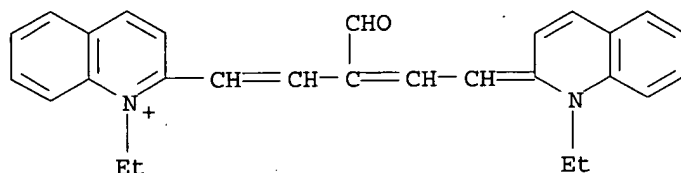
RN 104259-41-8 HCAPLUS

CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-3-formyl-1,3-pentadienyl]-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 76712-66-8

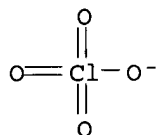
CMF C28 H27 N2 O



CM 2

CRN 14797-73-0

CMF Cl O4



IT 104109-02-6P 104259-45-2P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(preparation and absorption spectra of)

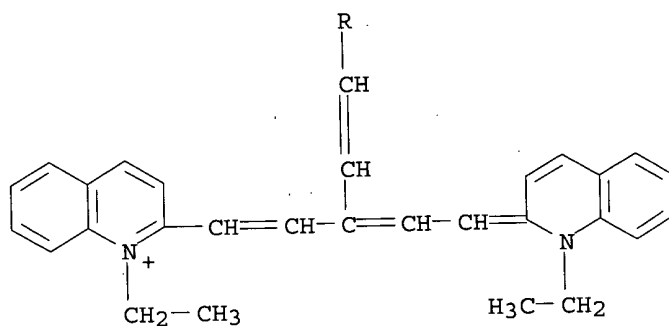
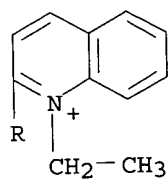
RN 104109-02-6 HCAPLUS

CN Quinolinium, 2,2'-[3-[(1-ethyl-2(1H)-quinolinylidene)ethylidene]-1,4-pentadiene-1,5-diyl]bis[1-ethyl-, diperchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 47845-01-2

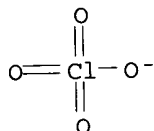
CMF C40 H39 N3



CM 2

CRN 14797-73-0

CMF Cl O4

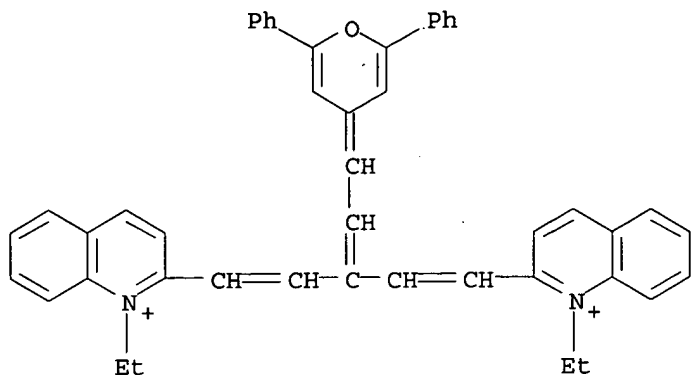


RN 104259-45-2 HCAPLUS  
 CN Quinolinium, 2,2'-[3-[(2,6-diphenyl-4H-pyran-4-ylidene)ethylidene]-1,4-pentadiene-1,5-diyl]bis[1-ethyl-, dperchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 104259-44-1

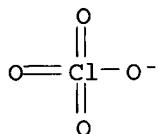
CMF C46 H40 N2 O



CM 2

CRN 14797-73-0

CMF Cl 04



L29 ANSWER 52 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1986:407937 HCAPLUS

DOCUMENT NUMBER: 105:7937

TITLE:  $\beta$ -(Perfluoroalkyl)carbocyanines

AUTHOR(S): Yagupol'skii, L. M.; Pazenok, S. V.; Kondratenko, N. V.

CORPORATE SOURCE: Inst. Org. Khim., Kiev, USSR

SOURCE: Zhurnal Organicheskoi Khimii (1986), 22(1), 163-9

CODEN: ZORKAE; ISSN: 0514-7492

DOCUMENT TYPE: Journal

LANGUAGE: Russian

OTHER SOURCE(S): CASREACT 105:7937

AB Benzoselenazole, 2-quinoline, 4-quinoline, indole, benz[e]indole, and benzimidazole tricarbocyanine dyes with  $\beta$ -perfluoroalkyl substituents were prepared and the influence of the perfluoroalkyl groups on the color of the dyes was studied. Introduction of the perfluoroalkyl substituents in 2-quinoline and indole carbocyanine dyes caused a bathochromic shift of the absorption maximum. The  $\beta$  substituents caused a hypsochromic shift in 4-quinoline and benz[e]indole carbocyanines, but had no influence on the benzimidazole carbocyanines.

IT 102693-52-7

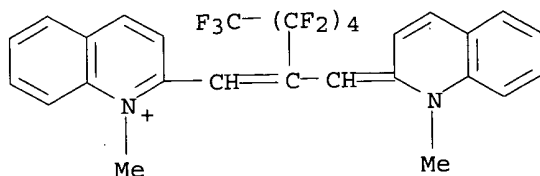
RL: PRP (Properties)  
(spectral properties of, perfluoroalkyl substituent effect on)

RN 102693-52-7 HCAPLUS

CN Quinolinium, 2-[3,3,4,4,5,5,6,6,7,7,7-undecafluoro-2-[(1-methyl-2(1H)-quinolinylidene)methyl]-1-heptenyl]-1-methyl-, perchlorate (9CI) (CA INDEX NAME)

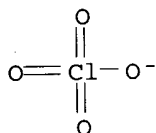
CM 1

CRN 102693-51-6  
CMF C28 H20 F11 N2

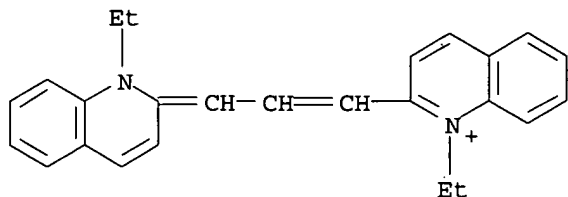


CM 2

CRN 14797-73-0  
CMF Cl O4

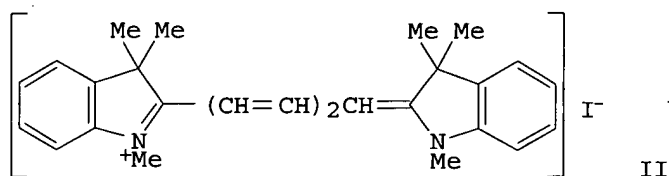
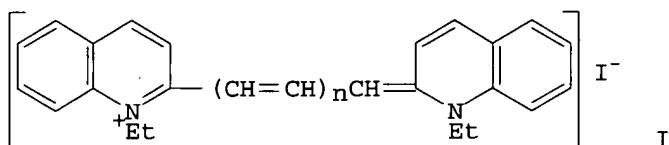


L29 ANSWER 53 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1986:90474 HCAPLUS  
 DOCUMENT NUMBER: 104:90474  
 TITLE: Photophysical parameters of pinacyanol from nonlinear absorption measurements using nanosecond laser pulses  
 AUTHOR(S): Stiel, Holger; Teuchner, Klaus; Daehne, Siegfried  
 CORPORATE SOURCE: Zentralinst. Opt. Spektrosk., Dtsch. Akad. Wiss., Berlin, 1199, Ger. Dem. Rep.  
 SOURCE: Zeitschrift fuer Chemie (1985), 25(7), 264-5  
 CODEN: ZECEAL; ISSN: 0044-2402  
 DOCUMENT TYPE: Journal  
 LANGUAGE: German  
 AB Pinacyanol [605-91-4], a fluorescent potential laser switching dye, shows a nonlinear transmission curve in EtOH for excitation frequency 594 nm, with 26.3-40% switching. A model involving 4 energy levels was used to explain the observation.  
 IT 605-91-4  
 RL: USES (Uses)  
 (photophys. parameters of, from nonlinear absorption measurements using nanosecond laser pulses)  
 RN 605-91-4 HCAPLUS  
 CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

L29 ANSWER 54 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1986:35458 HCAPLUS  
 DOCUMENT NUMBER: 104:35458  
 TITLE: The resonance Raman spectra of some cyanine dyes  
 AUTHOR(S): Yang, J. P.; Callender, R. H.  
 CORPORATE SOURCE: City Coll., City Univ. New York, New York, NY, 10031, USA  
 SOURCE: Journal of Raman Spectroscopy (1985), 16(5), 319-21  
 CODEN: JRSPAF; ISSN: 0377-0486  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI



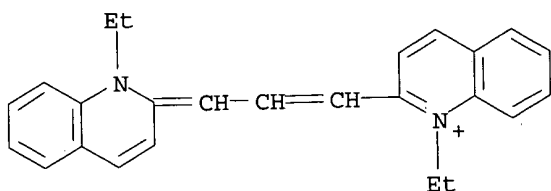
AB The resonance Raman spectra of a series of cyanine dyes (I; n = 0-3) were obtained. Raman spectra of II [36536-22-8] were also measured. The Raman bands were assigned to normal modes arising from particular mol. moieties. For comparison purposes, the IR spectra of these dyes are also presented.

IT 605-91-4 14187-31-6 17695-32-8

RL: PRP (Properties)  
 (resonance Raman spectra of)

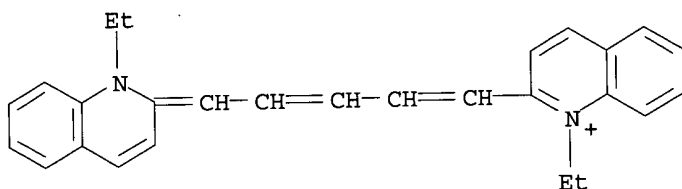
RN 605-91-4 HCAPLUS

CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-, iodide (9CI) (CA INDEX NAME)



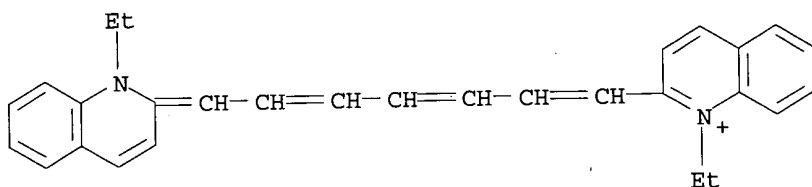
● I<sup>-</sup>

RN 14187-31-6 HCAPLUS  
 CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-  
 , iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

RN 17695-32-8 HCAPLUS  
 CN Quinolinium, 1-ethyl-2-[7-(1-ethyl-2(1H)-quinolinylidene)-1,3,5-  
 heptatrienyl]-, iodide (9CI) (CA INDEX NAME)

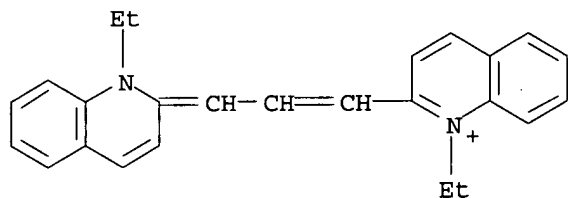


● I<sup>-</sup>

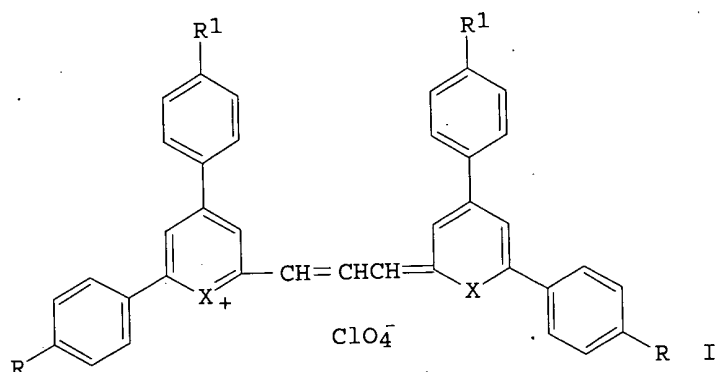
L29 ANSWER 55 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1985:102731 HCAPLUS  
 DOCUMENT NUMBER: 102:102731  
 TITLE: Determination of lifetimes and transient absorption  
 spectra of polymethine dyes from picosecond  
 spectroscopic measurements



AUTHOR(S): Rentsch, S.; Danielius, R.; Gadonas, R.  
CORPORATE SOURCE: Sekt. Phys., Friedrich-Schiller-Univ., Jena, DDR-6900,  
Ger. Dem. Rep.  
SOURCE: Journal fuer Signalaufzeichnungsmaterialien (1984),  
12(5), 319-28  
CODEN: JSZMAE; ISSN: 0323-598X  
DOCUMENT TYPE: Journal  
LANGUAGE: German  
AB The lifetimes  $\tau$  of the S1 state of a series of polymethine dyes,  
ranging from 10 to 150 ps, were determined by picosecond spectroscopy  
techniques from their transient absorption and fluorescence spectra. The  
extinction coeffs. of the transient absorption with the maximum between 500  
and 600 nm amount to  $\epsilon \approx 105 \text{ L mol}^{-1} \text{ cm}^{-1}$ . In the near-  
IR region, they are 1 order of magnitude lower. The results are  
discussed in terms of the participating absorption and relaxation  
processes.  
IT 605-91-4  
RL: PRP (Properties)  
(singlet-state lifetime of, picosecond transient absorption  
spectroscopy in determination of)  
RN 605-91-4 HCAPLUS  
CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-,  
iodide (9CI) (CA INDEX NAME)



L29 ANSWER 56 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 1985:80259 HCAPLUS  
DOCUMENT NUMBER: 102:80259  
TITLE: Pyrylocyanines. 20. Symmetric methoxy-substituted  
tetraphenylpyrylocyanines and their heteroanalogs  
AUTHOR(S): Gavrilyuk, I. M.; Ishchenko, A. A.; Kudinova, M. A.;  
Tolmachev, A. I.  
CORPORATE SOURCE: Inst. Org. Khim., Kiev, 252660, USSR  
SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (1984), (11),  
1486-91  
CODEN: KGSSAQ; ISSN: 0453-8234  
DOCUMENT TYPE: Journal  
LANGUAGE: Russian  
OTHER SOURCE(S): CASREACT 102:80259  
GI



AB Anal. of the visible and near IR spectra of I (R, R1 = H, OMe; X = O, S, NMe) shows that there is greater participation of the C-C bonds of the heterocycle ring in the system of conjugation for the O and S heterocycles than for the N heterocycle. The I (X = O, S) were prepared from the 2,4-diaryl-6-methylpyrylium or -thiopyrylium salts and HC(OEt)<sub>3</sub>. The I (X = NMe) were prepared from the corresponding I (X = O) and MeNH<sub>2</sub>. The OMe substituents have a bathochromic effect, both in CH<sub>2</sub>Cl<sub>2</sub> and in MeCN.

IT 94663-83-9P 94663-85-1P 94663-87-3P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (preparation and spectra of)

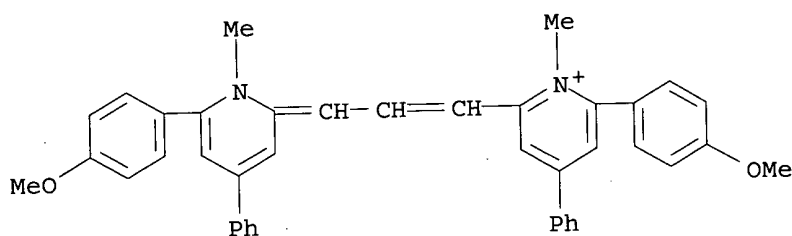
RN 94663-83-9 HCAPLUS

CN Pyridinium, 2-(4-methoxyphenyl)-6-[3-[6-(4-methoxyphenyl)-1-methyl-4-phenyl-2(1H)-pyridinylidene]-1-propenyl]-1-methyl-4-phenyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 94663-82-8

CMF C41 H37 N2 O2

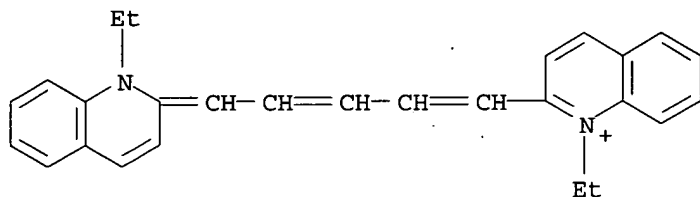


CM 2

CRN 14797-73-0

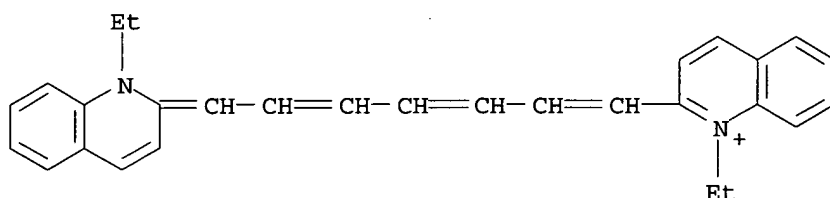
CMF Cl O4

RN 37069-60-6 HCAPLUS

CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-  
(9CI) (CA INDEX NAME)

RN 37069-61-7 HCAPLUS

CN Quinolinium, 1-ethyl-2-[7-(1-ethyl-2(1H)-quinolinylidene)-1,3,5-heptatrienyl]- (9CI) (CA INDEX NAME)



L29 ANSWER 49 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1987:516950 HCAPLUS

DOCUMENT NUMBER: 107:116950

TITLE: Electrochemical and spectroscopic analyses of the thermodynamics of the reversible dimerization of cyanine radical dications

AUTHOR(S): Lenhard, J. R.; Parton, R. L.

CORPORATE SOURCE: Res. Lab., Eastman Kodak Co., Rochester, NY, 14650, USA

SOURCE: Journal of the American Chemical Society (1987), 109(19), 5808-13

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Radical dications initially formed during the one-electron oxidation of alkyl-substituted cationic dicarbocyanine dyes underwent reversible dimerization in MeCN at room temperature. The site of radical-radical coupling was determined by NMR spectroscopy to be at an approachable even-methine carbon of polymethine chain. The C-C bond dissociation energy in the dimer was determined

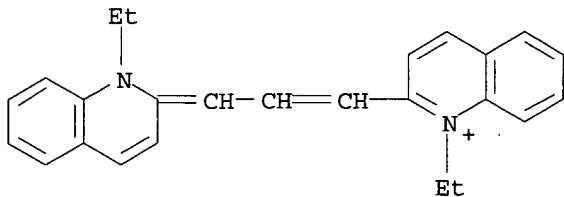
for a series of variously substituted dicarbocyanines from the temperature dependence of UV-visible spectra and ranged from 12.2 to 16.8 kcal/mol. The corresponding free entropy change involved with the dimer dissociation process ranged from 21 to 32 eu. Upon consideration of the dicarbocyanine structures, the exptl. results can be interpreted in terms of steric destabilization of the covalently bonded dimer.

IT 109977-78-8

RL: RCT (Reactant); RACT (Reactant or reagent)  
(dimerization of)

RN 109977-78-8 HCAPLUS

RN 605-91-4 HCAPLUS  
CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-,  
iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

L29 ANSWER 48 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 1987:625182 HCAPLUS  
DOCUMENT NUMBER: 107:225182  
TITLE: A comparison of the singlet-singlet and triplet-triplet spectra of some typical symmetrical cyanine dyes  
AUTHOR(S): Naqvi, K. Razi  
CORPORATE SOURCE: Dep. Phys., Univ. Trondheim-AVH, Dragvoll, N-7055, Norway  
SOURCE: Spectroscopy Letters (1987), 20(4), 319-30  
CODEN: SPLEBX; ISSN: 0038-7010  
DOCUMENT TYPE: Journal  
LANGUAGE: English

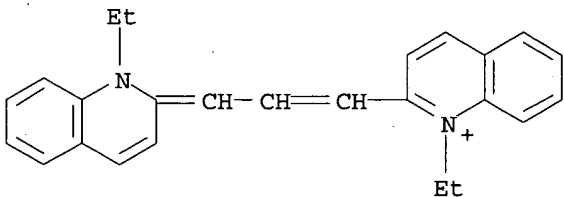
AB The triplet-triplet (T-T) spectra of 12 sym. cyanine dyes were recorded by using flash photolysis in the presence of triplet state sensitizers. Three sets of dyes were studied, each set comprising 4 members which differ from one another by the length of the bridge joining 2 identical nuclei (quinoline or benzthiazole); the internuclear linking is made by one =CH-, or by a chain composed of 3, 5, or 7 such groups. Excluding the shortest member of each set, the remaining 9 dyes follow a common trend; the wavenumber of the 0-0 vibrational peak of the most intense T-T absorption band is linearly related to that of the 0-0 peak of the 1st singlet-singlet absorption band.

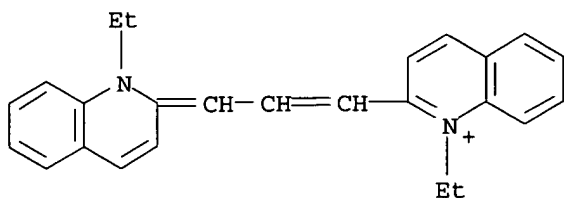
IT 20187-38-6 37069-60-6 37069-61-7

RL: PRP (Properties)  
(absorption spectra of)

RN 20187-38-6 HCAPLUS

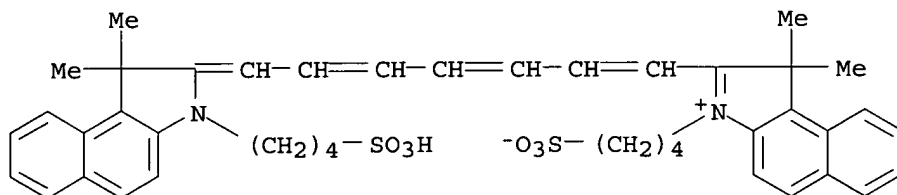
CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-  
(9CI) (CA INDEX NAME)





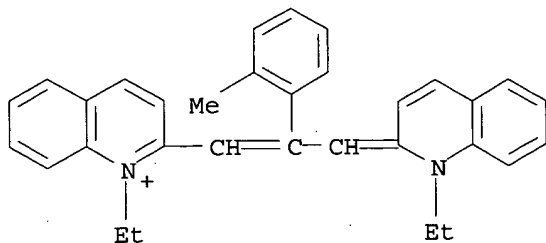
● I<sup>-</sup>

RN 3599-32-4 HCAPLUS  
 CN 1H-Benz[e]indolium, 2-[7-[1,3-dihydro-1,1-dimethyl-3-(4-sulfoethyl)-2H-benz[e]indol-2-ylidene]-1,3,5-heptatrienyl]-1,1-dimethyl-3-(4-sulfoethyl)-, inner salt, sodium salt (9CI) (CA INDEX NAME)



● Na

L29 ANSWER 47 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1988:188427 HCAPLUS  
 DOCUMENT NUMBER: 108:188427  
 TITLE: Picosecond studies of dimer relaxation processes in cyanine dyes in dependence of temperature  
 AUTHOR(S): Maschke, R.; Rentsch, S.; Khetschinaschwili, D.  
 CORPORATE SOURCE: Friedrich-Schiller-Univ., Jena, Ger. Dem. Rep.  
 SOURCE: Teubner-Texte zur Physik (1986), 10 (Ultrafast Phenom. Spectrosc.), 230-3  
 CODEN: TTPHE2; ISSN: 0233-0911  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB The ratio of pinacyanol excited monomers and dimers was calculated in dependence on the intensity of the exciting pulse using the absorption cross sections and the mass action constant of monomers and dimers. The results agreed with the values obtained from the  $\Delta D(\lambda, t = 0)$  spectrum. The excited monomer decayed in a few picoseconds, the dimer in a few hundred picoseconds. The decay processes were accelerated by increasing temperature. The fitting of the exptl. curves of  $\Delta D(t)$  resulted in an extremely high number of fast-relaxing particles. For the explanation of this fact a pseudo-dissociation of dimers was proposed.  
 IT 605-91-4, Pinacyanol  
 RL: PRP (Properties)  
 (photochem. self association of, relaxation of, temperature effect on)



● I<sup>-</sup>

L29 ANSWER 46 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1988:463117 HCAPLUS

DOCUMENT NUMBER: 109:63117

TITLE: Dye sensitization of van der Waals surfaces of tin disulfide photoanodes

AUTHOR(S): Parkinson, Bruce A.

CORPORATE SOURCE: Cent. Res. Dev. Dep., E. I. du Pont de Nemours and Co., Wilmington, DE, 19898, USA

SOURCE: Langmuir (1988), 4(4), 967-76  
CODEN: LANGD5; ISSN: 0743-7463

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The sensitization of the van der Waals surface of SnS<sub>2</sub> (E<sub>g</sub> = 2.22 eV) with >30 different dyes (λ<sub>max</sub> < 2.2 eV) was studied. The van der Waals surface of this material has several advantages for studying sensitization. It is renewable via cleavage and lacks an oxide layer under ambient conditions. The relevance of the electrochem. properties of the dyes to their sensitization behavior is discussed. Adsorption isotherms for many of the dyes were measured by relating quantum yield for electron injection to surface coverage. Both J and H aggregates and monomeric dye species sensitize n-SnS<sub>2</sub>. The photocurrent-voltage behavior of the dye was interpreted by using Spitler's theory of electron injection into semiconductors. Sensitized photocurrents were also studied as a function of light intensity and supersensitizer concentration to aid the qual. theor. anal. Several unusual effects associated with the layered structure of the semiconductor were observed including dye intercalation, total internal reflection of the incident light, and surface phase changes.

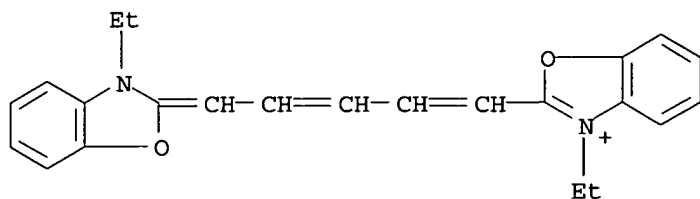
IT 605-91-4, Pinacyanol 3599-32-4, IR-125

RL: PRP (Properties)

(sensitization of van der Waals surfaces of tin disulfide photoanodes by)

RN 605-91-4 HCAPLUS

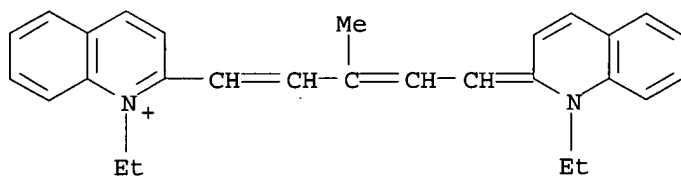
CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-, iodide (9CI) (CA INDEX NAME)



RN 116450-48-7 HCAPLUS  
 CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-3-methyl-1,3-pentadienyl]-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

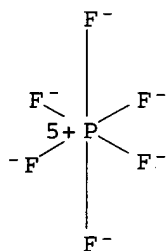
CM 1

CRN 97559-15-4  
 CMF C28 H29 N2



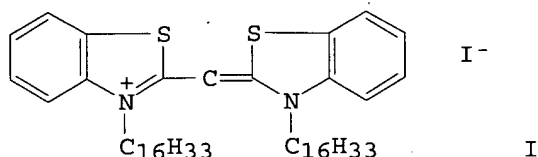
CM 2

CRN 16919-18-9  
 CMF F6 P  
 CCI CCS



RN 116450-49-8 HCAPLUS  
 CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-2-(2-methylphenyl)-1-propenyl]-, iodide (9CI) (CA INDEX NAME)

GI



AB A photog. imaging system is disclosed comprising an imaging dye or a precursor thereof, a hardenable organic component containing ethylenic unsatn. sites and capable of imagewise modulating mobility of the dye or dye precursor as a function of addition at the sites of ethylenic unsatn., and cointiators for ethylenic addition. The cointiators include an azinium salt activator and a photosensitizer which is a dye exhibiting a reduction potential which in relation to that of the ionized azinium salt activator is  $\leq 0.1$  V more pos., and when the photosensitizer is a keto dye having its principal absorption peak at a wavelength  $< 550$  nm, it exhibits when excited by imaging radiation and intersystem crossing efficiency to a triplet state of  $< 10\%$ . The system produces primary dye images efficiently with radiation of any desired wavelength in the visible spectrum and can exhibit sensitivity extending into near IR region. Thus, a composition containing Ph 1,2,4-tri(2-acryloyloxy Et carboxylate),

2-acryloyloxy Et

benzoate, 1-methoxy-4-Ph pyridinium tetrafluoroborate (reduction potential  $-0.75$  V), and I ( $\lambda_{\text{max}}$  430 nm, reduction potential  $-1.45$  V) was highly effective in forming images.

IT 2768-90-3 14806-50-9 116450-48-7

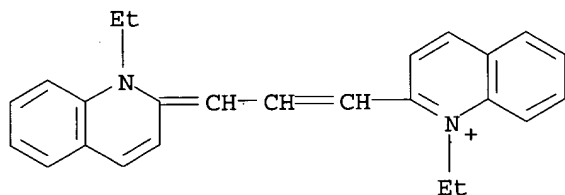
116450-49-8

RL: USES (Uses)

(photosensitizer, in photoimaging composition reduction potential in relation to)

RN 2768-90-3 HCAPLUS

CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-, chloride (9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

RN 14806-50-9 HCAPLUS

CN Benzoxazolium, 3-ethyl-2-[5-(3-ethyl-2(3H)-benzoxazolyliidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)



DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB The correlations between the structure and some properties of croconium and related cyanine dyes are discussed. PPP MO calcns. show that the croconium dyes have the same chromophoric system as cyanines. The  $\lambda_{\text{max}}$  of the croconium dyes undergoes a bathochromic shift of .apprx.120 nm compared with the corresponding cyanine dyes. This shift can be calculated by the PPP MO method. Neg. solvatochromism is observed for croconium dyes. Croconium dyes generally have better solubility than squarylium dyes in organic solvents and have good lightfastness in solvents, greatly improved by adding a Ni complex as a stabilizer.

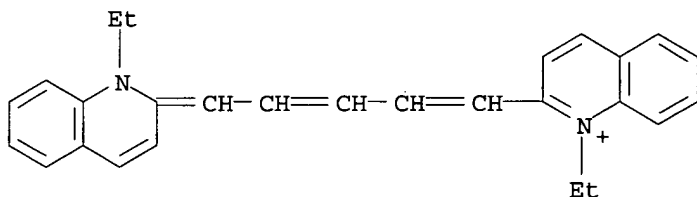
IT 14187-31-6

RL: PRP (Properties)

(absorption spectra of, substituent effect on)

RN 14187-31-6 HCAPLUS

CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

L29 ANSWER 45 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1988:539163 HCAPLUS

DOCUMENT NUMBER: 109:139163

TITLE: Dye-sensitized photographic imaging system

INVENTOR(S): Farid, Samir Y.; Haley, Neil F.; Moody, Roger E.;  
 Specht, Donald P.

PATENT ASSIGNEE(S): Eastman Kodak Co., USA

SOURCE: U.S., 25 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 3

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4743531	A	19880510	US 1986-933712	19861121
CA 1329042	A1	19940503	CA 1987-547870	19870925
JP 63138345	A2	19880610	JP 1987-292194	19871120
EP 269397	A2	19880601	EP 1987-310306	19871123
EP 269397	A3	19881207		

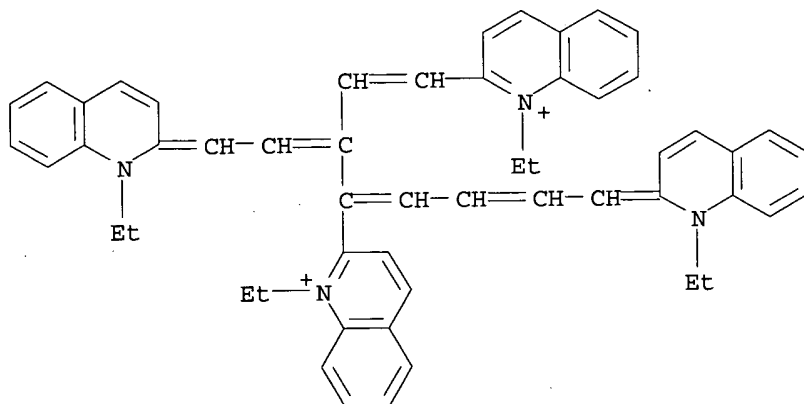
R: DE, FR, GB

PRIORITY APPLN. INFO.:	US 1986-933658	A	19861121
	US 1986-933660	A	19861121
	US 1986-933712	A	19861121

RN 123811-99-4 HCAPLUS  
 CN Quinolinium, 2,2'-[4-[4-(1-ethyl-2(1H)-quinolinylidene)-2-butenylidene]-3-  
 [(1-ethyl-2(1H)-quinolinylidene)ethylidene]-1-butene-1,4-diyl]bis[1-ethyl-  
 , bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

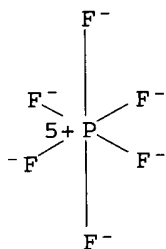
CM 1

CRN 123811-98-3  
 CMF C54 H52 N4



CM 2

CRN 16919-18-9  
 CMF F6 P  
 CCI CCS



L29 ANSWER 44 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1989:175116 HCAPLUS  
 DOCUMENT NUMBER: 110:175116  
 TITLE: Syntheses and some properties of **infrared**  
 -absorbing croconium and related dyes  
 AUTHOR(S): Yasui, Shigeo; Matsuoka, Masaru; Kitao, Teijiro  
 CORPORATE SOURCE: Nippon Kankoh-Shikiso Kenkyusho Co. Ltd., Okayama,  
 701-02, Japan  
 SOURCE: Dyes and Pigments (1989), Volume Date 1988, 10(1),  
 13-22  
 CODEN: DYPIDX; ISSN: 0143-7208

SOURCE: Journal of Organic Chemistry (1990), 55(1), 49-57  
CODEN: JOCEAH; ISSN: 0022-3263

DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Radical dications formed during the one-electron oxidation of representative cationic dicarbocyanine (pentamethine) dyes lacking alkyl substitution on the even-numbered carbon atoms of the methine chain underwent irreversible dimerization in MeOH or MeCN solution. Deprotonation of the resultant UV-absorbing dimer gave a dicationic bis-dye with spectral properties similar to those of the parent dye. These bis-dyes were susceptible to further oxidation via a reversible two-electron mechanism to yield a highly unsatd., cross-conjugated, tetracationic species. The chemical of radical dications derived from the one-electron oxidation of carbocyanine (trimethine) dyes depended on the nature of the dye heterocycle as well as the degree of alkyl substitution in the methine chain. Some thiocarbocyanine radical dications irreversibly dimerized and gave products analogous to those observed for dicarbocyanines. A persistent radical dication was obtained by the one-electron oxidation of an indolocarbocyanine and a chain-substituted thiocarbocyanine dye.

IT 123811-95-0P 123811-99-4P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(preparation and spectral properties of)

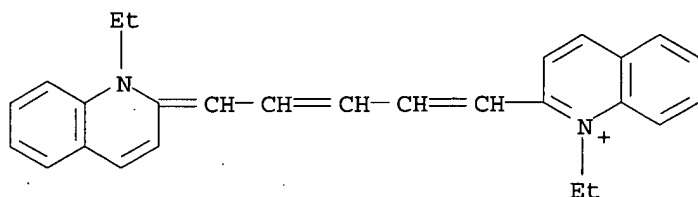
RN 123811-95-0 HCAPLUS

CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 37069-60-6

CMF C27 H27 N2

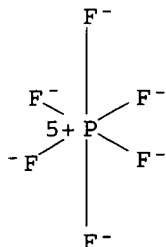


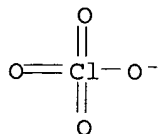
CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS

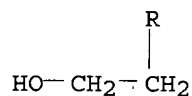
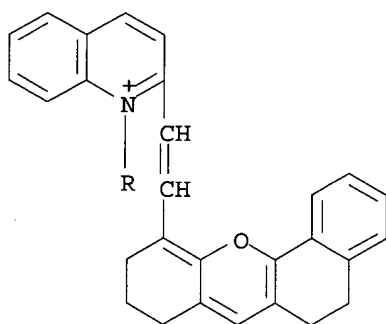




RN 129296-90-8 HCAPLUS  
 CN Quinolinium, 1-(2-hydroxyethyl)-2-[2-(5,8,9,10-tetrahydro-6H-benzo[c]xanthen-11-yl)ethenyl]-, perchlorate (salt) (9CI) (CA INDEX NAME)

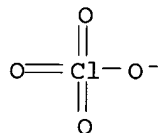
CM 1

CRN 129296-89-5  
 CMF C30 H28 N O2

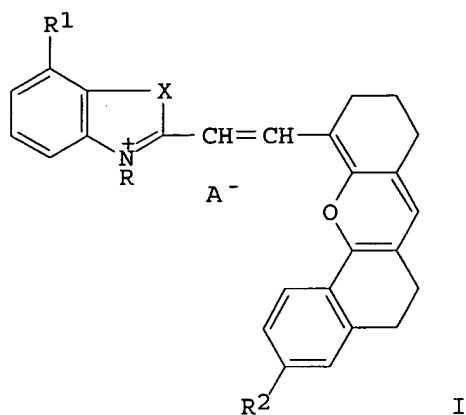


CM 2

CRN 14797-73-0  
 CMF Cl O4



L29 ANSWER 43 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1990:38114 HCAPLUS  
 DOCUMENT NUMBER: 112:38114  
 TITLE: Dimerization reactions of cyanine radical dications  
 AUTHOR(S): Parton, R. L.; Lenhard, J. R.  
 CORPORATE SOURCE: Res. Lab., Eastman Kodak Co., Rochester, NY, 14650, USA



AB The synthesis of asym. trimethine cyanine dyes (I; R = Me, Et, allyl, hydroxyethyl; R1 = H; R2 = H, OMe; X = O, S, CH:CH, CMe2; R1X = CH:CH:CH:C; A = ClO4, Br, I) is described. The absorption maximum of the dyes is within the range 687-793 nm.

IT 129296-88-4P 129296-90-8P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation and near-IR absorption spectra of)

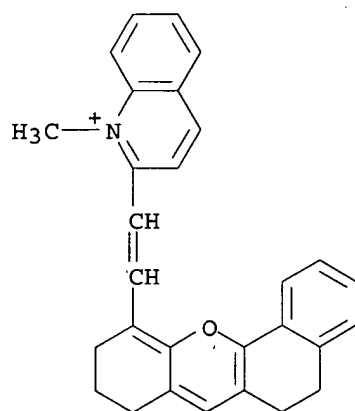
RN 129296-88-4 HCAPLUS

CN Quinolinium, 1-methyl-2-[2-(5,8,9,10-tetrahydro-6H-benzo[c]xanthen-11-yl)ethenyl]-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 129296-87-3

CMF C29 H26 N O



CM 2

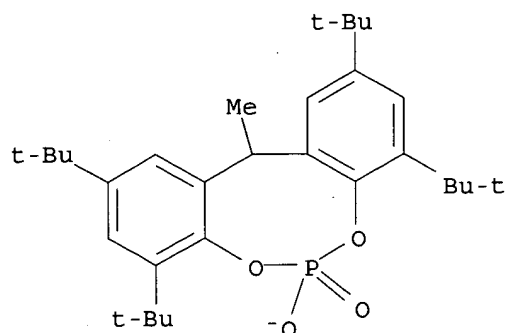
CRN 14797-73-0

CMF Cl O4

CM 1

CRN 130154-32-4

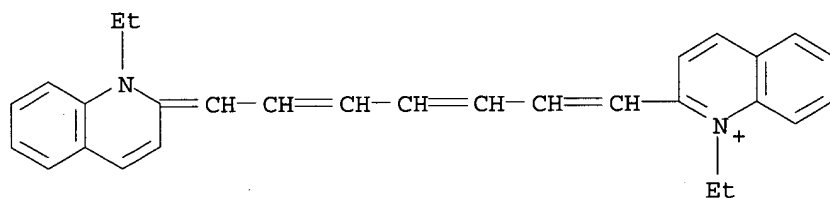
CMF C30 H44 O4 P



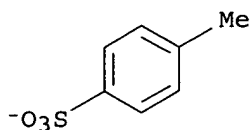
CM 2

CRN 37069-61-7

CMF C29 H29 N2



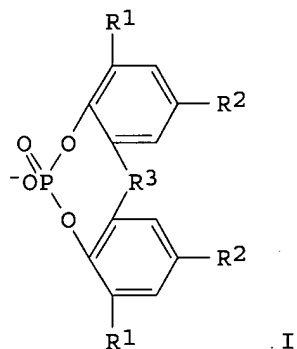
L29 ANSWER 42 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 1990:534161 HCAPLUS  
DOCUMENT NUMBER: 113:134161  
TITLE: Near-**infrared** absorbing asymmetrical  
trimethine cyanine dyes  
AUTHOR(S): Gadzhev, N.; Deligeorgiev, T.  
CORPORATE SOURCE: Fac. Chem., Univ. Sofia, Sofia, 1126, Bulg.  
SOURCE: Dyes and Pigments (1990), 14(1), 73-77  
CODEN: DYPIDX; ISSN: 0143-7208  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
GI



L29 ANSWER 41 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1990:601455 HCAPLUS  
 DOCUMENT NUMBER: 113:201455  
 TITLE: Optical recording materials with good information storage stability  
 INVENTOR(S): Akutsu, Mitsuo; Kubota, Naohiro  
 PATENT ASSIGNEE(S): Adeka Argus Chemical Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01201388	A2	19890814	JP 1988-26279	19880205
PRIORITY APPLN. INFO.:			JP 1988-26279	19880205
OTHER SOURCE(S):	MARPAT	113:201455		

GI

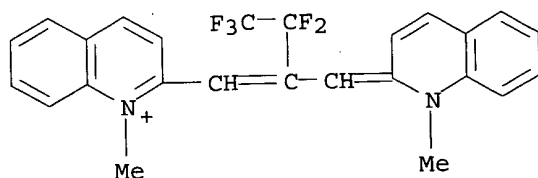


AB The title materials, which can be used with low-energy visible and near-**IR lasers**, comprise salts of cyanine dye cations and organic phosphate anions I (R1, R2 = H, alkyl; R3 = direct bond, alkylidene, S).

IT **130154-34-6**  
 RL: USES (Uses)  
 (optical recording media based on)

RN 130154-34-6 HCAPLUS

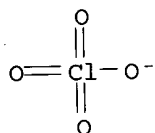
CN Quinolinium, 1-ethyl-2-[7-(1-ethyl-2(1H)-quinolinylidene)-1,3,5-heptatrienyl]-, salt with 2,4,8,10-tetrakis(1,1-dimethylethyl)-6-hydroxy-12-methyl-12H-dibenzo[d,g][1,3,2]dioxaphosphocin 6-oxide (1:1) (9CI) (CA INDEX NAME)



CM 2

CRN 14797-73-0

CMF Cl O4



IT 2871-11-6

RL: PRP (Properties)

(redox potential of, substitution mechanism in electrochem. reaction of nitrogen-containing heterocyclic bases with heptafluoropropyl iodide in relation to)

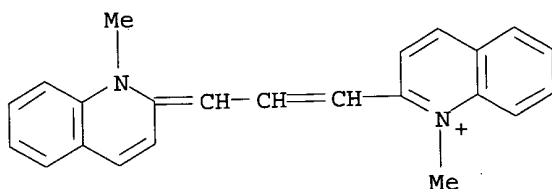
RN 2871-11-6 HCAPLUS

CN Quinolinium, 1-methyl-2-[3-(1-methyl-2(1H)-quinolinylidene)-1-propenyl]-, salt with 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 36954-41-3

CMF C23 H21 N2

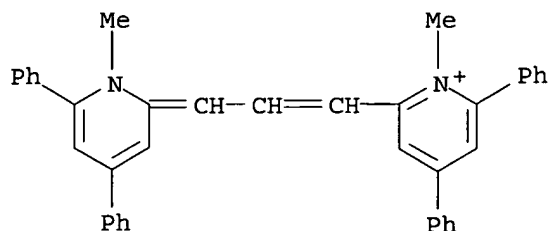


CM 2

CRN 16722-51-3

CMF C7 H7 O3 S

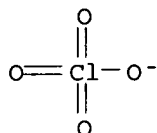




CM 2

CRN 14797-73-0

CMF Cl O4



L29 ANSWER 40 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1991:25807 HCAPLUS

DOCUMENT NUMBER: 114:25807

TITLE: Electrochemical initiation of ion-radical reactions of perfluoroalkyl halides. I. Electrochemical synthesis of  $\beta$ -perfluoroalkyl carbocyanine dyes

AUTHOR(S): Ignat'ev, N. V.; Datsenko, S. D.; Pazenok, S. V.; Yagupol'skii, L. M.

CORPORATE SOURCE: Inst. Org. Khim., Kiev, USSR

SOURCE: Zhurnal Organicheskoi Khimii (1990), 26(8), 1740-6

CODEN: ZORKAE; ISSN: 0514-7492

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB  $\beta$ -Perfluoroalkyl carbocyanine dyes were prepared electrochem. under controlled potential at a Pt cathode by reaction of  $\text{CF}_3\text{CF}_2\text{CF}_2\text{I}$  with methylene bases of N-containing heterocycles (indole, benzothiazole, lepidine, quinaldine). A SRN1 mechanism was proposed for this reaction based on the redox potentials of the initial methylene bases,  $\text{CF}_3\text{CF}_2\text{CF}_2\text{I}$ , the obtained  $\beta$ -perfluoroalkyl carbocyanines, and the corresponding carbocyanine dyes.

IT 88505-21-9P

RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of, by electrochem. reaction of nitrogen-containing heterocyclic

methylene bases with heptafluoropropyl iodide, nucleophilic substitution mechanism in, redox potential in relation to)

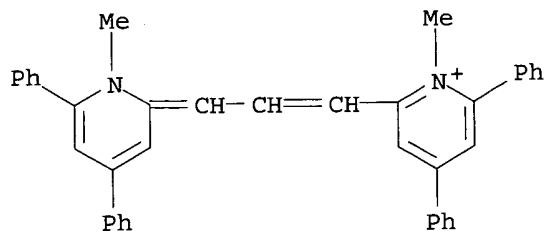
RN 88505-21-9 HCAPLUS

CN Quinolinium, 1-methyl-2-[3,3,4,4,4-pentafluoro-2-[(1-methyl-2(1H)-quinolinylidene)methyl]-1-butenyl]-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 88505-20-8

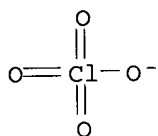
CMF C25 H20 F5 N2



CM 2

CRN 14797-73-0

CMF Cl O4



L29 ANSWER 39 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1992:580723 HCAPLUS

DOCUMENT NUMBER: 117:180723

TITLE: Vibronic interaction and shape of electron absorption bands of polymethine dyes

AUTHOR(S): Ishchenko, A. A.

CORPORATE SOURCE: Inst. Org. Khim., Kiev, Ukraine

SOURCE: Ukrainskii Khimicheskii Zhurnal (Russian Edition)

(1991), 57(11), 1166-71

CODEN: UKZHAU; ISSN: 0041-6045

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB The principal types of vibrations were analyzed, determining the shape of the vibronic absorption bands of polymethine dyes. Formulas were obtained, relating the higher central moments of these bands to the magnitude of the squared variations of the bond orders during excitation of the cyanine mols. On the basis of quantum mech. calcns., these values can predict the tendency for a change to occur in the absorption band shape of polymethine dyes as a function of their structures. Some 24 dyes were studied.

IT 75547-08-9

RL: PRP (Properties)

(electronic absorption band shape and vibronic interaction of)

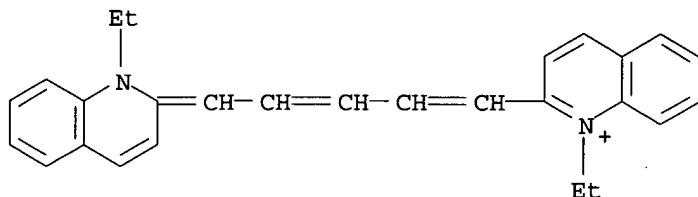
RN 75547-08-9 HCAPLUS

CN Pyridinium, 1-methyl-2-[3-(1-methyl-4,6-diphenyl-2(1H)-pyridinylidene)-1-propenyl]-4,6-diphenyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 75547-07-8

CMF C39 H33 N2



L29 ANSWER 38 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1995:253939 HCAPLUS

DOCUMENT NUMBER: 122:67154

TITLE: Nature of heteroatom and spectral-luminescence properties of pyrylocyanine dyes

AUTHOR(S): Ishchenko, A. A.

CORPORATE SOURCE: Inst. Org. Khim., Kiev, Ukraine

SOURCE: Optika i Spektroskopiya (1994), 77(5), 771-6

CODEN: OPSPAM; ISSN: 0030-4034

PUBLISHER: MAIK Nauka

DOCUMENT TYPE: Journal

LANGUAGE: Russian

AB Using the examples of tetra-Ph-substituted pyrylo-2 and pyrylo-4-cyanines, and their S-, Se-, and N-containing analogs, heteroatom effects on spectral-luminescence properties were studied. Substitution of O by S, Se, and NMe increases the Stokes shift. By quantum chemical anal. of the bond orders of ground and excited states, this shift is discussed with respect to the mol. geom. (decrease of Ph group angle with chromophore plane upon excitation). Relations were obtained which link the width, asymmetry, and excess of the vibronic bands with the frequency and shape of the chromophore vibrations corresponding with the long-wave  $\pi-\pi^*$  transition. With the assistance of these relations, it is shown that the changes in the absorption and fluorescence bands upon transition from pyrylo- to thiopyrylo- and pyridocyanine- is determined principally by vibronic interactions, and transition to selenopyrylocyanine- by the heavy-atom effect.

IT 75547-08-9

RL: PRP (Properties)

(nature of heteroatom and spectral-luminescence properties of pyrylocyanine dyes)

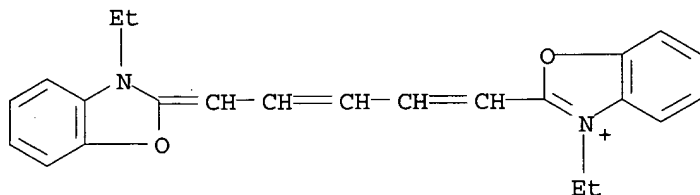
RN 75547-08-9 HCAPLUS

CN Pyridinium, 1-methyl-2-[3-(1-methyl-4,6-diphenyl-2(1H)-pyridinyli-1-propenyl)-4,6-diphenyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 75547-07-8

CMF C39 H33 N2



● I<sup>-</sup>

L29 ANSWER 37 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1996:327176 HCAPLUS

DOCUMENT NUMBER: 125:13287

TITLE: Dicarbocyanine dyes in methanol solution probed by depolarized Rayleigh and hyper-Rayleigh light scattering

AUTHOR(S): Song, Ok-Keun; Wang, C. H.

CORPORATE SOURCE: Dep. Chem., Univ. Nebraska Lincoln, Lincoln, NE, 68588-0304, USA

SOURCE: Journal of Chemical Physics (1996), 104(21), 8230-8236  
CODEN: JCPSA6; ISSN: 0021-9606

PUBLISHER: American Institute of Physics

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The hyper-Rayleigh scattering (HRS) intensity of two sym. carbocyanine dyes (1,1'-diethyl-4,4'- and 1,1'-diethyl-2,2'-dicarbocyanine) in methanol is measured as a function of dye concentration. These dye mols. at equilibrium show a

negligible permanent dipole moment. The low concentration data showing that the

HRS intensity is proportional to the dye concentration are used to determine the first

hyperpolarizability for each of these dyes. However, above a concentration  $p_b = 0.1 + 10^{-3}$  M, the HRS intensity shows an anomalous concentration dependence. Above  $p_b$ , the HRS intensity shows a saturation behavior and it even decreases with increasing concentration at high dye concentration. At lowest

concentration, the depolarization ratio is 0.18. As the dye concentration increases,

the depolarization ratio also rapidly increases but the increase quickly sats. as the concentration exceeds  $p_b$ . The concentration dependence of the

HRS intensity and depolarization ratio are interpreted as due to formation of mol. aggregates. The depolarized Rayleigh scattering (DRS) intensity is also measured as a function of dye concentration. The result of DRS

corroborates well with that found in HRS.

IT 37069-60-6

RL: PRP (Properties)

(dicarbocyanine dyes in methanol solution probed by depolarized Rayleigh and hyper-Rayleigh light scattering)

RN 37069-60-6 HCAPLUS

CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]- (9CI) (CA INDEX NAME)

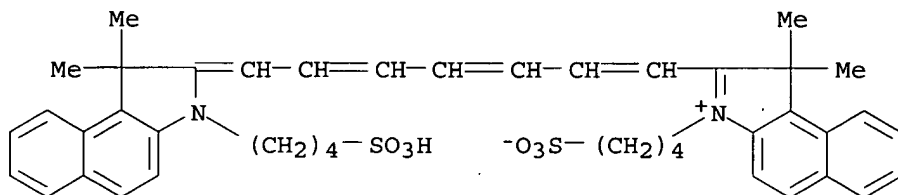
1,1'-Diethyl-2,2'-dicarbocyanine iodide 14806-50-9,

3,3'-Diethyloxadicarbocyanine iodide

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(biospecific multiparameter assay method with microparticle solid supports for bioaffinity reagents)

RN 3599-32-4 HCAPLUS

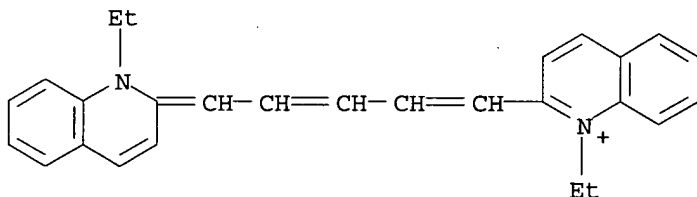
CN 1H-Benz[e]indolium, 2-[7-[1,3-dihydro-1,1-dimethyl-3-(4-sulfobutyl)-2H-benz[e]indol-2-ylidene]-1,3,5-heptatrienyl]-1,1-dimethyl-3-(4-sulfobutyl)-, inner salt, sodium salt (9CI) (CA INDEX NAME)



● Na

RN 14187-31-6 HCAPLUS

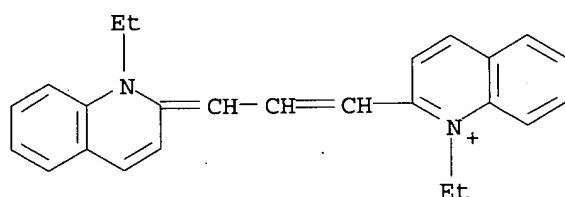
CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylydene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

RN 14806-50-9 HCAPLUS

CN Benzoxazolium, 3-ethyl-2-[5-(3-ethyl-2(3H)-benzoxazolylydene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

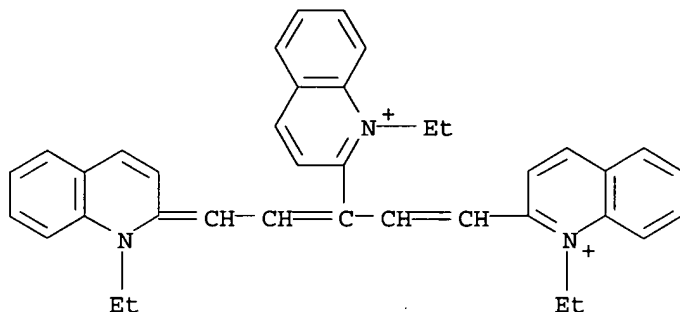
L29 ANSWER 36 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1996:569646 HCAPLUS  
 DOCUMENT NUMBER: 125:216392  
 TITLE: A biospecific multiparameter assay method  
 INVENTOR(S): Soini, Erkki; Hanninen, Pekka; Soini, Juhani  
 PATENT ASSIGNEE(S): Finland  
 SOURCE: PCT Int. Appl., 42 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 3  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9622531	A1	19960725	WO 1996-FI4	19960103
W: CA, DE, FI, JP, SE, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
FI 96641	B	19960415	FI 1995-175	19950116
FI 96641	C	19960725		
FI 9501040	A	19960908	FI 1995-1040	19950307
FI 101829	B1	19980831		
EP 804732	A1	19971105	EP 1996-900108	19960103
EP 804732	B1	20011010		
R: DE, FR, GB, SE				
JP 10512670	T2	19981202	JP 1996-522062	19960103
JP 3215428	B2	20011009		
US 5891738	A	19990406	US 1997-817753	19970513
PRIORITY APPLN. INFO.:			FI 1995-175	A 19950116
			FI 1995-1040	A 19950307
			WO 1996-FI4	W 19960103

AB The object of this invention is an improved method for a biospecific multiparameter (i.e., multianalyte) assay, e.g., especially immunoassay and DNA hybridization assay, based on the use of different categories of microparticles as solid support for different bioaffinity reagents. This invention allows the use of microparticles of small size and with very moderate monodispersity and conventional short decay time fluorescent labels for labeling the biospecific reactants. The high sensitivity of this method is based on the use of confocal excitation and detection, or alternatively, 2-photon excitation for measurement of the biospecific reaction. The identification of the category of the microparticle is based on the use of fluorescent or Raman scattering indicators associated with the microparticles representing different analytes.

IT 3599-32-4, IR-125 14187-31-6,

1,3-diyl]bis[1-ethyl-, diiodide (9CI) (CA INDEX NAME)

● 2 I<sup>-</sup>

L29 ANSWER 35 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1996:726262 HCAPLUS

DOCUMENT NUMBER: 126:122890

TITLE: Formation of fluorocarbon surfactant reversed micelles in a halosolvent

AUTHOR(S): Lai, Chung-Li; O'Rear, Edgar A.; Harwell, Jeffrey H.

CORPORATE SOURCE: Inst. of Applied Surfactant Research, Univ. of Oklahoma, Norman, OK, 73019, USA

SOURCE: Journal of Colloid and Interface Science (1996), 183(1), 166-175

CODEN: JCISA5; ISSN: 0021-9797

PUBLISHER: Academic

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The constitution of reversed micelles of C<sub>6</sub>F<sub>13</sub>COOH (perfluoroheptanoic acid, PFHA) in a chlorofluorocarbon medium (1,1,2-trichlorotrifluoroethane, TCFE) was characterized by a number of techniques, including IR, NMR, and UV-visible and fluorescence probes. Dimensions of these reversed micelles were determined by quasielastic light scattering. With increasing concentration of surfactant in TCFE, the estimated diameter

of the water pool in the reversed micelles increased, the estimated aggregation number of the reversed micelles increased, and the estimated wt% water increased. These ests. were consistent with the results of the probe studies and Karl Fischer titrns. Adsorption of fluoroacids from this solvent onto alumina showed cooperative interactions between head groups.

IT 2768-90-3, Pinacyanol chloride

RL: NUU (Other use, unclassified); USES (Uses)

(pinacyanol chloride color changes as indication of perfluoroheptanoic acid reversed micelle formation in trichlorotrifluoroethane)

RN 2768-90-3 HCAPLUS

CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-, chloride (9CI) (CA INDEX NAME)

Arrhenius, Peter Olaf Gustaf; Hsu, Mao-Lin  
 PATENT ASSIGNEE(S): Hyperion, Inc., USA  
 SOURCE: PCT Int. Appl., 78 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 9  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9641144	A2	19961219	WO 1996-US8935	19960604
WO 9641144	A3	19970206		
W: CA, CN, JP				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5880287	A	19990309	US 1995-476544	19950606
JP 2001517296	T2	20011002	JP 1997-501385	19960604
PRIORITY APPLN. INFO.:			US 1995-476544	A 19950606
			US 1990-524212	B2 19900515
			US 1991-701449	A3 19910515
			US 1991-701465	B1 19910515
			US 1994-333603	A2 19941102
			US 1994-346098	A2 19941129
			WO 1996-US8935	W 19960604

AB Fluorescent dyes comprising a fluorophore moiety which comprises a luminescent substantially planar mol. structure with excitation wavelength  $\geq 500$  nm, bonded to one or more polyoxyhydrocarbylene moieties, are free of aggregation and serum binding and thus suitable for applications such as fluorescence immunoassays, in vivo imaging and in vivo tumor therapy. Immunoassay methods utilizing these dyes are thus particularly useful for the assay of biol. fluids, such as serum, plasma, whole blood and urine.

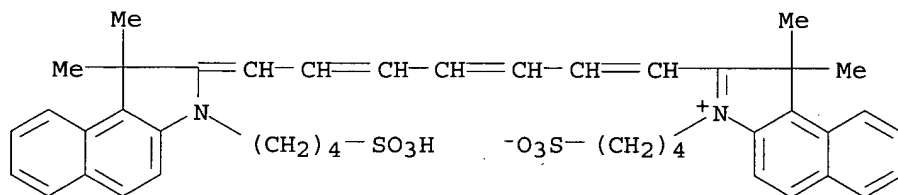
IT 3599-32-4D, IR 125, polyoxyethylene derivs.

40071-05-4D, polyoxyethylene derivs.

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (polyoxyhydrocarbylene-modified marker components for use in fluorescence immunoassays)

RN 3599-32-4 HCAPLUS

CN 1H-Benz[e]indolium, 2-[7-[1,3-dihydro-1,1-dimethyl-3-(4-sulfobutyl)-2H-benz[e]indol-2-ylidene]-1,3,5-heptatrienyl]-1,1-dimethyl-3-(4-sulfobutyl)-, inner salt, sodium salt (9CI) (CA INDEX NAME)

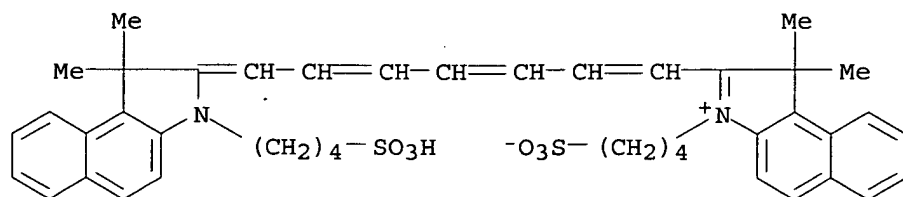


● Na

RN 40071-05-4 HCAPLUS

CN Quinolinium, 2,2'-[3-[(1-ethyl-2(1H)-quinolinylidene)ethylidene]-1-propene-

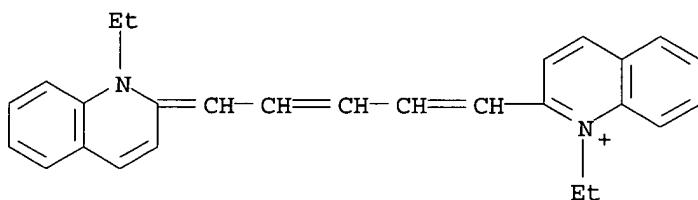




● Na

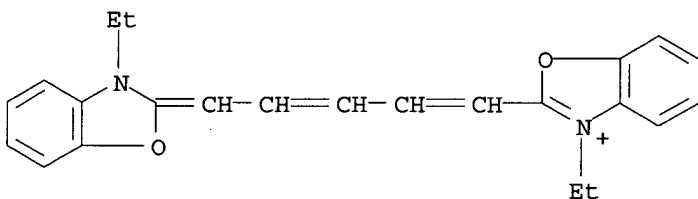
RN 14187-31-6 HCAPLUS

CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)

● I<sup>-</sup>

RN 14806-50-9 HCAPLUS

CN Benzoxazolium, 3-ethyl-2-[5-(3-ethyl-2(3H)-benzoxazolyliidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)

● I<sup>-</sup>

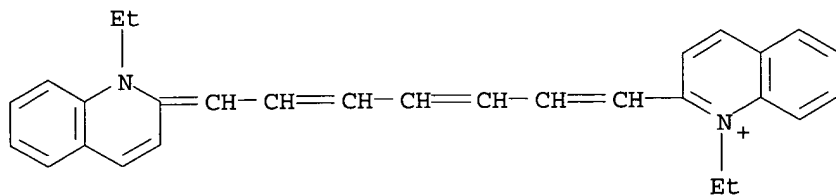
L29 ANSWER 34 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1997:132797 HCAPLUS

DOCUMENT NUMBER: 126:145372

TITLE: Polyoxyhydrocarbylene-modified marker components for use in fluorescence immunoassays

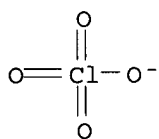
INVENTOR(S): Dandliker, Walter Beach; Devlin, Robert Francis;



CM 2

CRN 14797-73-0

CMF Cl O4



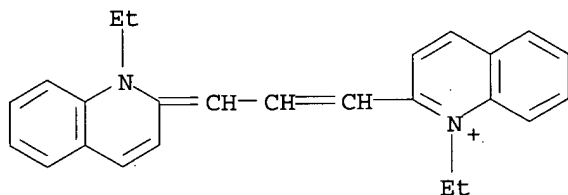
IT 605-91-4, Pinacyanol 3599-32-4, IR-125

14187-31-6, DDI 14806-50-9

RL: DEV (Device component use); MOA (Modifier or additive use); USES  
(Uses)

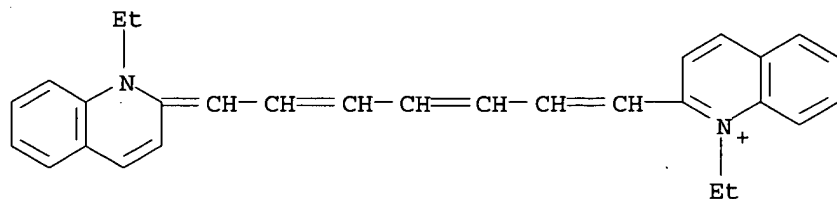
(polyacrylamide gel-based solid-state dye laser hosts)

RN 605-91-4 HCAPLUS

CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-,  
iodide (9CI) (CA INDEX NAME)● I<sup>-</sup>

RN 3599-32-4 HCAPLUS

CN 1H-Benz[e]indolium, 2-[7-[1,3-dihydro-1,1-dimethyl-3-(4-sulfobutyl)-2H-  
benz[e]indol-2-ylidene]-1,3,5-heptatrienyl]-1,1-dimethyl-3-(4-sulfobutyl)-  
, inner salt, sodium salt (9CI) (CA INDEX NAME)



● I<sup>-</sup>

L29 ANSWER 33 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1997:204438 HCAPLUS

DOCUMENT NUMBER: 126:256922

TITLE: Solid-state dye **laser** host

INVENTOR(S): Kessler, William J.; Davis, Steven J.; Ferguson, Daniel R.; Pugh, Evan R.

PATENT ASSIGNEE(S): Physical Sciences, Inc., USA

SOURCE: U.S., 17 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5610932	A	19970311	US 1995-377656	19950125
PRIORITY APPLN. INFO.:			US 1995-377656	19950125

AB Solid-state dye **laser** media comprise a polyacrylamide gelatin solid host doped with a **laser** dye. Processes for formulating the solid-state dye **laser** hosts entail combining acrylamide with a crosslinking agent in the presence of catalysts and initiators, and, before a polymerization reaction which formulates a substantially gelatin structure, doping the acrylamide mixture with a **laser** dye having one or more base solvents. **Lasers** employing the media are also described. The solid state dye host may exhibit self healing after photobleaching due to dye migration within the encapsulated form.

IT 57472-19-2, DTP

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(DTP; polyacrylamide gel-based solid-state dye **laser** hosts)

RN 57472-19-2 HCAPLUS

CN Quinolinium, 1-ethyl-2-[7-(1-ethyl-2(1H)-quinolinylidene)-1,3,5-heptatrienyl]-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 37069-61-7

CMF C29 H29 N2

L29 ANSWER 32 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1997:490757 HCAPLUS  
 DOCUMENT NUMBER: 127:142845  
 TITLE: Image-forming material for presensitized lithographic plate and image forming method  
 INVENTOR(S): Hirai, Katsura; Kudo, Shinji; Kizu, Noriyuki  
 PATENT ASSIGNEE(S): Konica Co., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 30 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09171254	A2	19970630	JP 1996-268640	19961009
US 6391512	B1	20020521	US 1996-723457	19961015
JP 2004118228	A2	20040415	JP 2004-15109	20040123
PRIORITY APPLN. INFO.:			JP 1995-272491	A 19951020
			JP 1996-268640	A3 19961009

AB The title material comprises a support coated with a photosensitive layer containing a compound generating an acid upon active ray irradiation, a compound

having  $\geq 1$  acid-decomposable bond, and an IR absorbent.

The acid-decomposable compound may have  $(CH_2CH_2O)_n$  ( $n = 2-5$ ) group. The material is imagewise exposed by using visible light of wavelength  $\geq 700$  nm or IR rays followed by removing the exposed area with an alkaline developing solution to form an image. The material shows high sensitivity toward IR rays, good developability, and storage stability.

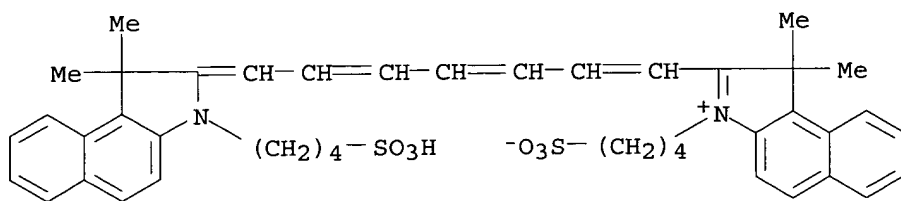
IT 3599-32-4 17695-32-8

RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)

(image forming material containing acid generator, acid-decomposable compound, and IR absorbent for lithog. plate)

RN 3599-32-4 HCAPLUS

CN 1H-Benz[e]indolium, 2-[7-[1,3-dihydro-1,1-dimethyl-3-(4-sulfobutyl)-2H-benz[e]indol-2-ylidene]-1,3,5-heptatrienyl]-1,1-dimethyl-3-(4-sulfobutyl)-, inner salt, sodium salt (9CI) (CA INDEX NAME)



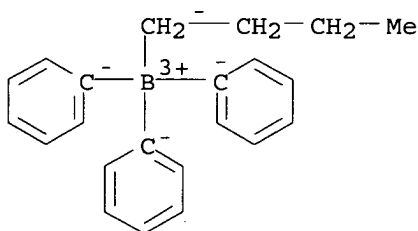
● Na

RN 17695-32-8 HCAPLUS

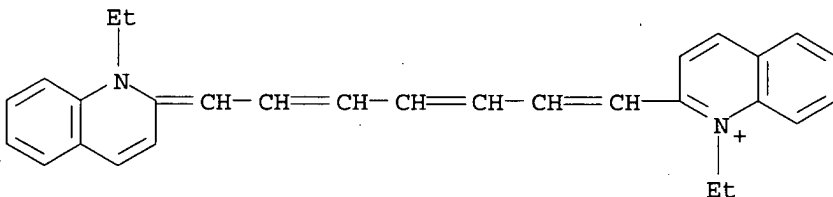
CN Quinolinium, 1-ethyl-2-[7-(1-ethyl-2(1H)-quinolinylidene)-1,3,5-heptatrienyl]-, iodide (9CI) (CA INDEX NAME)

AB The composition contains a photopolymerizable acrylic resin having polymerizable unsatd. group, an ethylenic unsatd. compound, a coloring pigment, cation dye-borate anion complex, and a photopolymn. initiator except the complex. A color filter is manufactured by a process including following successive steps; (1) forming a photosensitive coating film made of the above composition on a transparent substrate, (2) pattern-wise exposing the film to near IR to cure the exposed area, (3) developing to remove the non-exposed area, and optional (4) heating. The steps may be repeated to give a multicolor filter. The resin composition shows good storage stability and good curability.

CCI CCS



CMF C29 H29 N2



thus, the image can be produced by using a 10 m/s scanning spot of **laser** radiation beam (spot diameter of 30  $\mu$ m, 30 mW) at 785 nm. The sensitivity was increased 20x in comparison with a conventional Xe lamp exposure.

IT 201555-54-6

RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)

(sensitizing photopolymn. system for image formation with **laser** diode)

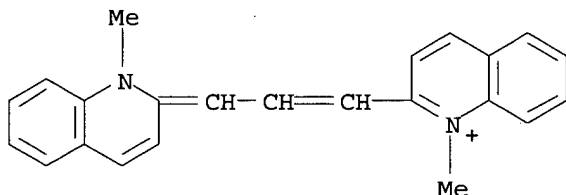
RN 201555-54-6 HCAPLUS

CN Quinolinium, 1-methyl-2-[3-(1-methyl-2(1H)-quinolinylidene)-1-propenyl]-, 2-naphthalenesulfonate (9CI) (CA INDEX NAME)

CM 1

CRN 36954-41-3

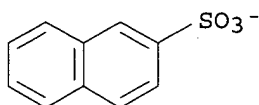
CMF C23 H21 N2



CM 2

CRN 16023-36-2

CMF C10 H7 O3 S



REFERENCE COUNT:

4

THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 31 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1997:618318 HCAPLUS

DOCUMENT NUMBER: 127:301273

TITLE: Near **infrared** ray-sensitive colored resin composition for color filter and manufacture of color filter

INVENTOR(S): Tamura, Koichi; Nakaya, Eisaku; Kojima, Daisuke

PATENT ASSIGNEE(S): Kansai Paint Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.

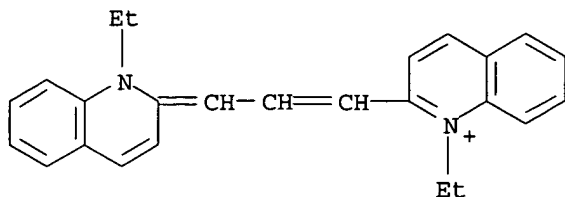
CODEN: JKXXAF

DOCUMENT TYPE: Patent

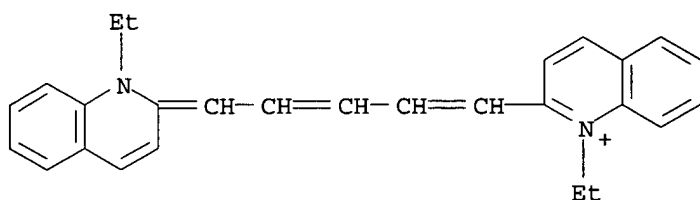
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

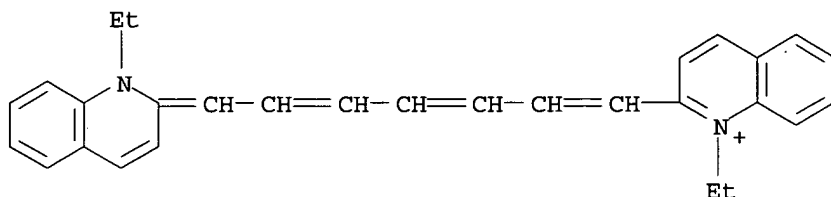
PATENT INFORMATION:



RN 37069-60-6 HCAPLUS

CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-  
(9CI) (CA INDEX NAME)

RN 37069-61-7 HCAPLUS

CN Quinolinium, 1-ethyl-2-[7-(1-ethyl-2(1H)-quinolinylidene)-1,3,5-  
heptatrienyl]- (9CI) (CA INDEX NAME)REFERENCE COUNT: 96 THERE ARE 96 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 30 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:31480 HCAPLUS

DOCUMENT NUMBER: 128:121606

TITLE: Photopolymerization system thermally accelerated by a  
**laser** diodeAUTHOR(S): Urano, Toshiyuki; Nagasaka, Hideki; Shimizu, Makoto;  
Yamaoka, TsuguoCORPORATE SOURCE: Research Center, Mitsubishi Chemical Corporation,  
Yokohama, JapanSOURCE: Journal of Imaging Science and Technology (1997),  
41(4), 407-412

CODEN: JIMTE6; ISSN: 1062-3701

PUBLISHER: Society for Imaging Science and Technology

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Thermal effect on sensitivity of photopolymn. systems containing 2, 4,  
6-tris(trichloromethyl)-1,3,5-triazine(TRI) and urethane acrylate (U1) was  
studied. The photopolymn. system was sensitized by an IR  
cyanine dye and irradiated with a **laser** radiation diode (LD),

SOURCE: Orsay, 91405, Fr.  
Journal of Photochemistry and Photobiology, A:  
Chemistry (1998), 114(1), 1-22  
CODEN: JPPCEJ; ISSN: 1010-6030  
PUBLISHER: Elsevier Science S.A.  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Transient absorption in several sym. cyanine and carbocyanine dyes is measured by time-resolved spectroscopy with subpicosecond white-light continuum in a wide spectral range (0.35-1  $\mu\text{m}$ ). The results are compared with data available in the literature on ultrashort and long-lived transients. The linear shift law observed here for the S1Sn absorption bands in the wavelength scale allows one to predict the main induced absorption bands for members of several carbocyanine families (vinyllogous series) which have not yet been studied. In the case of the shortest methine chains (cyanines and monocarbocyanines) a few transient absorption bands are assigned to the formation of photoisomers. The absolute values of the excited-state or photoisomer cross sections of polymethine carbocyanines are evaluated by global spectral anal., from the measured differential optical d. spectra. Several cases of large values (higher than 10) of the absorption cross section ratio (excited/ground state) are found at new wavelengths, which allows applications of photo-induced absorption to photonics and **laser** technologies over a broad spectral range.

IT 3599-32-4 20187-38-6 37069-60-6

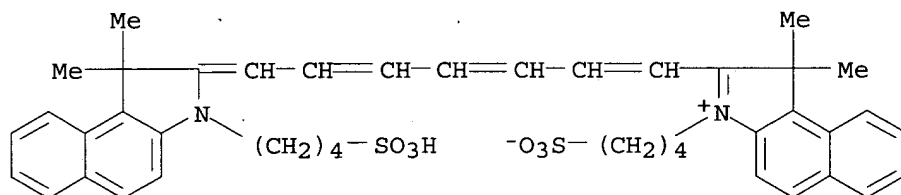
37069-61-7

RL: PRP (Properties)

(transient absorption of sym. carbocyanines)

RN 3599-32-4 HCAPLUS

CN 1H-Benz[e]indolium, 2-[7-[1,3-dihydro-1,1-dimethyl-3-(4-sulfobutyl)-2H-benz[e]indol-2-ylidene]-1,3,5-heptatrienyl]-1,1-dimethyl-3-(4-sulfobutyl)-, inner salt, sodium salt (9CI) (CA INDEX NAME)



● Na

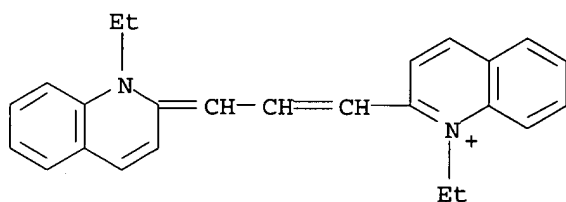
RN 20187-38-6 HCAPLUS

CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]- (9CI) (CA INDEX NAME)



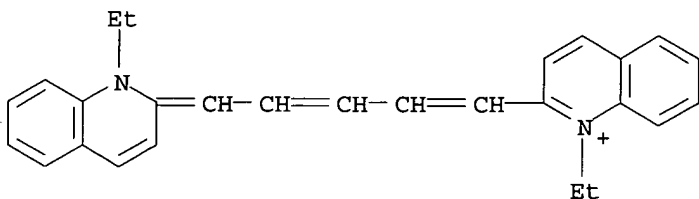
kcal/mol, resp. The results show that the dispersion force plays an important role in the aggregation of DCI and DDI in aqueous solution. The absorption bandwidth of the DCI/ethanol system has been measured as a function of temperature, providing evidence for no strong interaction between DCI and solvent mols. The participation of hydrophobic force in driving the aggregation is suggested. For the first time, DCI in aqueous solution is found to form a new aggregate which has both J- and H- bands.

IT 605-91-4, 1,1'-Diethyl-2,2'-carbocyanine iodide 14187-31-6  
 , 1,1'-Diethyl-2,2'-dicarbocyanine iodide  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties);  
 PROC (Process)  
 (spectroscopic studies on solution aggregation behavior of cyanine dyes)  
 RN 605-91-4 HCAPLUS  
 CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-,  
 iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

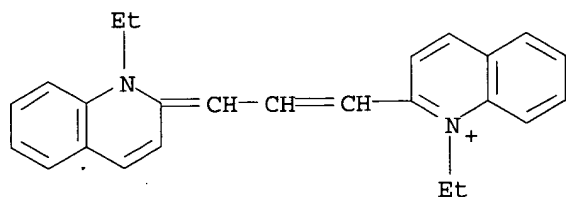
RN 14187-31-6 HCAPLUS  
 CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-,  
 iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

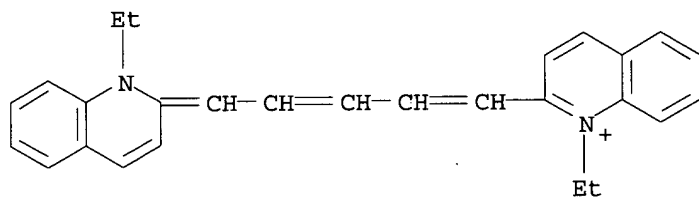
REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 29 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1998:194886 HCAPLUS  
 DOCUMENT NUMBER: 128:301933  
 TITLE: Transient absorption of symmetrical carbocyanines  
 AUTHOR(S): Meyer, Yves H.; Pittman, Moana; Plaza, Pascal  
 CORPORATE SOURCE: Lab. de Photophys. Mol. , CNRS, Univ. Paris-Sud,

● I<sup>-</sup>

RN 14187-31-6 HCAPLUS

CN Quinolinium, 1-ethyl-2-[(1-ethyl-2(1H)-quinolinyliidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)

● I<sup>-</sup>

REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 28 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:401834 HCAPLUS

DOCUMENT NUMBER: 129:55409

TITLE: The spectroscopic studies on the aggregation behavior of cyanine dyes

AUTHOR(S): Min, Hyungsik; Park, Jeunghee; Yu, Jongwan; Kim, Dongho

CORPORATE SOURCE: Department of Chemistry, Korea University, Chungnam, 339-700, S. Korea

SOURCE: Bulletin of the Korean Chemical Society (1998), 19(6), 650-654

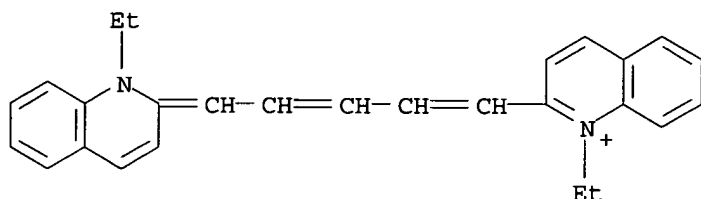
CODEN: BKCSDE; ISSN: 0253-2964

PUBLISHER: Korean Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Aggregations of 1,1'-diethyl-2,2'-carbocyanine iodide (DCI) and 1,1'-diethyl-2,2'-dicarbocyanine iodide (DDI) in aqueous solution have been investigated by steady-state absorption spectroscopy. The equilibrium consts. for dimerization of DCI and DDI are found to be  $(9.8 \pm 0.5) \times 10^4$  and  $(1.6 \pm 0.5) \times 10^5 \text{ M}^{-1}$ , resp., at 293 K. The enthalpy changes for the dimerization of DCI and DDI are  $-6.7 \pm 0.7$  and  $-7.7 \pm 0.8$



● I<sup>-</sup>

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 27 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:453668 HCAPLUS

DOCUMENT NUMBER: 129:123790

TITLE: Photoisomerization of symmetric carbocyanines

AUTHOR(S): Min, Hyungsik; Kang, Yoo Nam; Park, Jeunghye

CORPORATE SOURCE: Department of Chemistry, Korea University, Chungnam, 339-700, S. Korea

SOURCE: Bulletin of the Korean Chemical Society (1998), 19(7), 747-753

CODEN: BKCSDE; ISSN: 0253-2964

PUBLISHER: Korean Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The photoisomerization process of sym. carbocyanine dyes such as 3,3'-diethyloxadicarbocyanine iodide, 3,3'-diethylthiadibocyanine iodide (DTDCI), 1,1'-diethyl-2,2'-dicarbocyanine iodide (DDI), 1,1'-diethyl-2,2'-carbocyanine iodide, and cryptocyanine (1,1'-diethyl-4,4'-carbocyanine iodide) (CCI) have been studied by measuring the steady-state and time-resolved fluorescence spectra and the ground-state recovery profiles. The steady-state fluorescence spectrum of a photoisomer as a function of concentration and excitation wavelength provides evidence that the fluorescence of the photoisomer is formed by the radiative energy transfer from the normal form and the quantum yield for the formation of the photoisomer is increased by decreasing the excitation wavelength. The fluorescence decay profiles have been measured by using the time correlated single photon counting technique, showing a strong dependence on the concentration and the detection wavelength, which is due to

the

formation of excited photoisomers produced either by the radiative energy transfer from the normal form or by absorbing the 590 nm laser pulse. We report the fluorescence decay time of photoisomers for these cyanine dyes. The exptl. results are explained by introducing the semiempirical calcs. The ground state recovery profiles of DTDCI, DDI, and CCI normal forms have been measured, showing that the recovery time from the singlet excited state is similar to the fluorescence decay time.

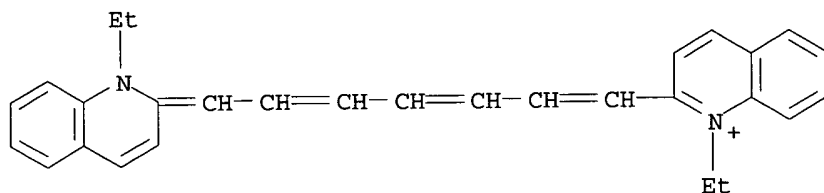
IT 605-91-4, 1,1'-Diethyl-2,2'-carbocyanine iodide 14187-31-6, 1,1'-Diethyl-2,2'-dicarbocyanine iodide

RL: PRP (Properties)

(photoisomerization of sym. carbocyanines)

RN 605-91-4 HCAPLUS

CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 26 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1998:644178 HCAPLUS

DOCUMENT NUMBER: 129:334674

TITLE: Chemically sensitive films for the detection of hazardous substances employing cyanine and nitroso near **infrared** dyes

AUTHOR(S): Norena-Franco, Luis E.; Kvasnik, Frank

CORPORATE SOURCE: Department of Instrumentation and Analytical Science, UMIST, Manchester, M60 1QD, UK

SOURCE: Analyst (Cambridge, United Kingdom) (1998), 123(10), 2185-2189

CODEN: ANALAO; ISSN: 0003-2654

PUBLISHER: Royal Society of Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The sensing potential of com. available near **IR** (**NIR**) -absorbing dyes for the detection of hazardous industrial substances such as hydrochloric acid, acetic acid and ammonia is reported. The **NIR** absorbing cyanine dyes DDI and **IR**-140 and the nitroso dye CI Acid Green 1, which have not been used in optical chemical sensors before, were entrapped within silicone and fluoropolymer films. These films were exposed to test atmospheres containing approx. 4% m/m concns. of the hazardous vapors and their response was assessed by absorption spectroscopy. The sensing films could be used in the development of distributed optical fiber sensors since the polymer matrixes are suitable for cladding silica optical fibers.

IT 14187-31-6, DDI

RL: NUU (Other use, unclassified); USES (Uses)

(chemical sensitive films for the detection of hazardous substances employing cyanine and nitroso near **IR** dyes)

RN 14187-31-6 HCAPLUS

CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)

US 5641878	A	19970624	US 1994-333603	19941102
US 5677199	A	19971014	US 1994-346098	19941129
CA 2223418	AA	19961219	CA 1996-2223418	19960604
CA 2223418	C	20031007		
WO 9641144	A2	19961219	WO 1996-US8935	19960604
WO 9641144	A3	19970206		

W: CA, CN, JP

RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE

CN 1198816	A	19981111	CN 1996-196037	19960604
JP 2001517296	T2	20011002	JP 1997-501385	19960604
US 5919922	A	19990706	US 1997-865812	19970530
US 6060598	A	20000509	US 1997-874820	19970613

PRIORITY APPLN. INFO.:

US 1990-524212	B2	19900515
US 1990-524212	B2	19900515
US 1991-701449	A3	19910515
US 1991-701465	B1	19910515
US 1994-333603	A2	19941102
US 1994-346098	A2	19941129
US 1990-523601	B1	19900515
US 1995-476544	A	19950606
WO 1996-US8935	W	19960604

AB Fluorescent dyes which are free of aggregation and serum binding, suitable as marker components for applications such as fluorescence immunoassays, in vivo imaging and in vivo tumor therapy, comprise a polymethine fluorophore moiety bonded to  $\geq 1$  polyoxyalkylene or carbohydrate moiety. For example, p-BrC<sub>6</sub>H<sub>4</sub>OH is etherified with Me(OCH<sub>2</sub>CH<sub>2</sub>)<sub>n</sub>OTs, the product treated with BuLi and acylated with p-Me<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>COCl, and the resulting benzophenone treated with Ph<sub>3</sub>PCH<sub>2</sub> Br to give 4-Me<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>C(:CH<sub>2</sub>)C<sub>6</sub>H<sub>4</sub>(OCH<sub>2</sub>CH<sub>2</sub>)<sub>n</sub>OMe-4, which can be coupled with HC(OEt)<sub>3</sub> or MeOCH:C(OMe)<sub>2</sub> to give the penta- or heptamethine compound, resp.

IT 3599-32-4D, IR 125, polyoxyethylene derivs.

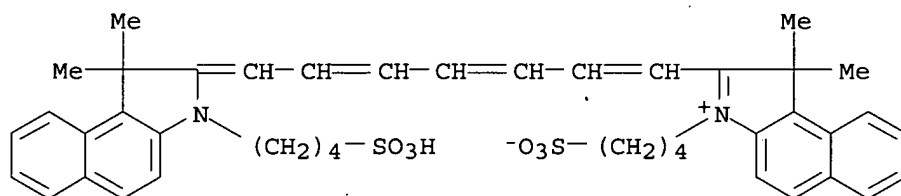
17695-32-8D, 1,1'-Diethyl-2,2'-quinotricarbocyanine iodide, polyoxyethylene derivs.

RL: ARG (Analytical reagent use); TEM (Technical or engineered material use); ANST (Analytical study); USES (Uses)

(polyoxyhydrocarbyl-related products for fluorescence assays)

RN 3599-32-4 HCAPLUS

CN 1H-Benz[e]indolium, 2-[7-[1,3-dihydro-1,1-dimethyl-3-(4-sulfobutyl)-2H-benz[e]indol-2-ylidene]-1,3,5-heptatrienyl]-1,1-dimethyl-3-(4-sulfobutyl)-, inner salt, sodium salt (9CI) (CA INDEX NAME)



● Na

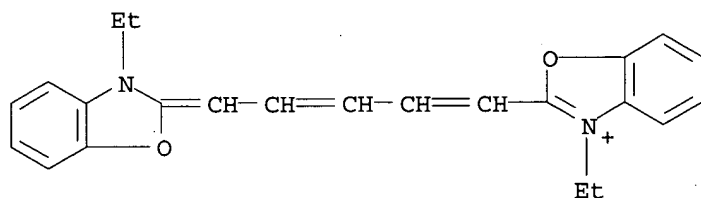
RN 17695-32-8 HCAPLUS

CN Quinolinium, 1-ethyl-2-[7-(1-ethyl-2(1H)-quinolinylidene)-1,3,5-heptatrienyl]-, iodide (9CI) (CA INDEX NAME)

RL: PEP (Physical, engineering or chemical process); PRP (Properties);  
PROC (Process)  
(effect of electron-donating end groups on absorption spectra and  
thermodn. stability of photo-isomers of sym. di- and tricarboyanine  
dyes)

RN 14806-50-9 HCAPLUS

CN Benzoxazolium, 3-ethyl-2-[5-(3-ethyl-2(3H)-benzoxazolylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)

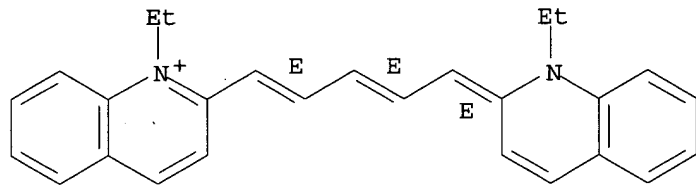


● I<sup>-</sup>

RN 64496-45-3 HCAPLUS

CN Quinolinium, 1-ethyl-2-[(1E,3E,5E)-5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



L29 ANSWER 25 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1999:183776 HCAPLUS

DOCUMENT NUMBER: 130:224351

TITLE: Polyoxyhydrocarbyl-related products for fluorescence assays

INVENTOR(S): Dandliker, Walter B.; Devlin, Robert Francis; Arrhenius, Peter Olaf Gustaf; Hsu, Mao-lin

PATENT ASSIGNEE(S): Hyperion, Inc., USA

SOURCE: U.S., 45 pp., Cont.-in-part of U.S. Ser. No. 346,098. CODEN: USXXAM

DOCUMENT TYPE: Patent

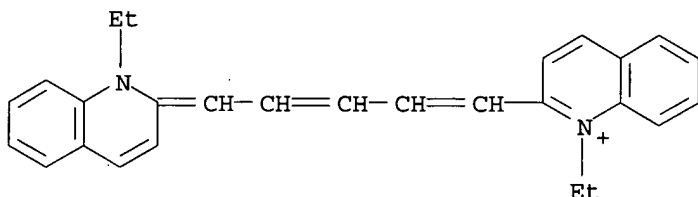
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 9

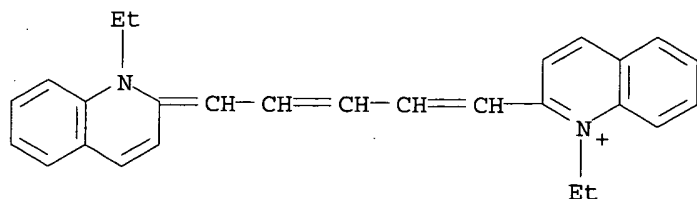
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5880287	A	19990309	US 1995-476544	19950606
US 5403928	A	19950404	US 1991-701449	19910515

AUTHOR(S): Tolmachev, A. I.; Il'chenko, A. Ya.; Kurdyukov, V. V.  
 CORPORATE SOURCE: Inst. Org. Khim., NAN, Kiev, Ukraine  
 SOURCE: Ukrainskii Khimicheskii Zhurnal (Russian Edition)  
 (1999), 65(11-12), 119-122  
 CODEN: UKZHAU; ISSN: 0041-6045  
 PUBLISHER: Institut Obshchei i Neorganicheskoi Khimii im. V. I.  
 Vernadskogo NAN Ukrainy  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 AB Absorption spectra of squarylium dyes are interpreted by interaction of  
 two chromophores-cyanine and oxonol ones. It has been shown that in  
 consequence of high basicity of oxonol chromophore the hypsochromic shifts  
 of long-wave absorption band as a rule are observed in squarylium dyes.  
 IT 37069-60-6  
 RL: PRP (Properties)  
 (electronic structure and absorption spectra of squarylium dyes)  
 RN 37069-60-6 HCAPLUS  
 CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-  
 (9CI) (CA INDEX NAME)

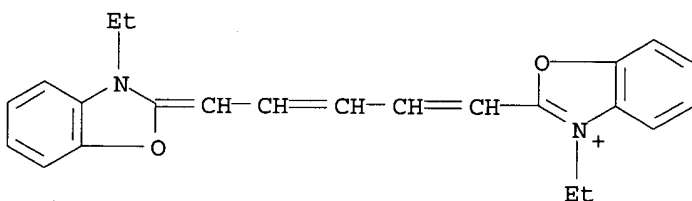


L29 ANSWER 24 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 1999:660500 HCAPLUS  
DOCUMENT NUMBER: 132:27952  
TITLE: Effect of the electron-donating end groups on  
absorption spectra and thermodynamic stability of  
photo-isomers of symmetric di- and tricarbo-  
cyanine dyes  
AUTHOR(S): Razumova, T. K.; Tarnovskii, A. N.  
CORPORATE SOURCE: Vseross. Nauchn. Tsentr " Gos. Opt. Inst. im. S. I.  
Vavilova, St. Petersburg, 199034, Russia  
SOURCE: Optika i Spektroskopiya (1999), 86(5), 778-784  
CODEN: OPSPAM; ISSN: 0030-4034  
PUBLISHER: MAIK Nauka  
DOCUMENT TYPE: Journal  
LANGUAGE: Russian  
AB The spectral characteristics of some stable all-trans-isomers (which are  
underivatized in the C backbone) di- and tricarbo-  
cyanines and also some  
unstable mono-cis-isomers which appear upon partial rotation around the  
central methine chain bond. On the basis of 15 example compds. the  
authors exptl. studied the effect of the electron donor capacity of the  
terminal functional group on the long-wave absorption spectral band maximum  
position and on the magnitude of the free energy of the ground and first  
excited singlets state upon isomerization. The characteristics of these  
changes depends on the class of the dye, which detts. the geometric  
symmetry of the carbo-  
cyanine groups relative to the central carbon atom in  
the polymethine chain.  
IT 14806-50-9, DODCI 64496-45-3



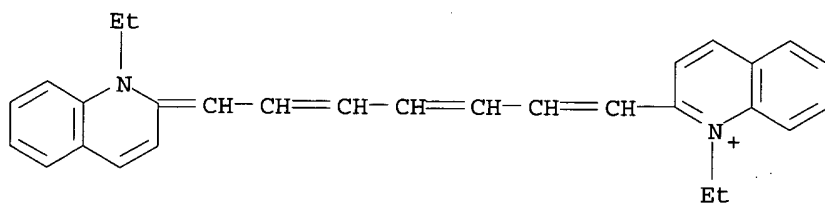
● I -

RN	14806-50-9	HCAPLUS
CN	Benzoxazolium, 3-ethyl-2-[5-(3-ethyl-2(3H)-benzoxazolylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)	



● I -

RN	17695-32-8	HCAPLUS
CN	Quinolinium, 1-ethyl-2-[7-(1-ethyl-2(1H)-quinolinylidene)-1,3,5-heptatrienyl]-, iodide (9CI) (CA INDEX NAME)	



● I -

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 23 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 2000:219521 HCAPLUS  
DOCUMENT NUMBER: 133:18766  
TITLE: Electronic structure and absorption spectra of



3,3'-Diethyloxadicarbocyanine iodide 17695-32-8,

1,1'-Diethyl-2,2'-quinotricarbocyanine iodide

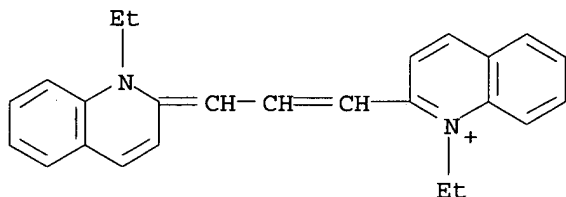
RL: PEP (Physical, engineering or chemical process); PRP (Properties);

PROC (Process)

(structural and environmental requirements for quenching of singlet oxygen by cyanine dyes)

RN 605-91-4 HCAPLUS

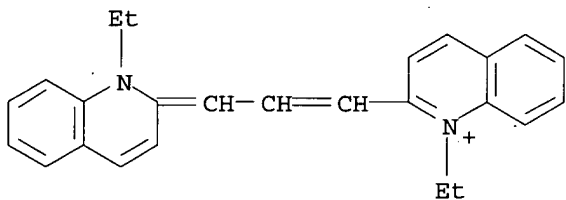
CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

RN 2768-90-3 HCAPLUS

CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-, chloride (9CI) (CA INDEX NAME)

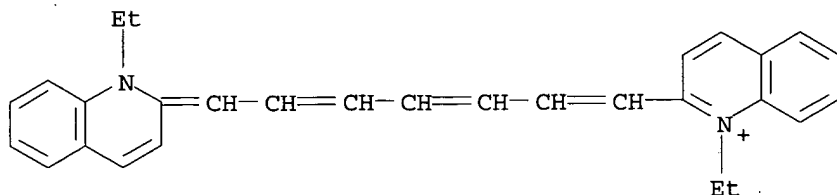


● Cl<sup>-</sup>

RN 14187-31-6 HCAPLUS

CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)

heptatrienyl]-, iodide (9CI) (CA INDEX NAME)

● I<sup>-</sup>

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 22 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:278960 HCAPLUS

DOCUMENT NUMBER: 133:51043

TITLE: Structural and environmental requirements for quenching of singlet oxygen by cyanine dyes

AUTHOR(S): Kanofsky, Jeffrey R.; Sima, Paul D.

CORPORATE SOURCE: Medical Services, Edward Hines, Jr. Department of Veterans Affairs Hospital, Hines, IL, 60141, USA

SOURCE: Photochemistry and Photobiology (2000), 71(4), 361-368  
CODEN: PHCBAP; ISSN: 0031-8655

PUBLISHER: American Society for Photobiology

DOCUMENT TYPE: Journal

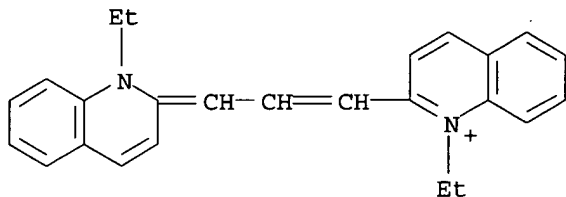
LANGUAGE: English

AB Singlet-oxygen quenching consts. were measured for 19 cyanine dyes in acetonitrile. The most efficient quenchers were 1-butyl-2-[2-[3-[(1-butyl-6-chlorobenz-[cd]indol-2(1H)-ylidene)ethylidene]-2-chloro-1-cyclohexen-1-yl]ethenyl]-6-chlorobenz[cd]indolium and 6-chloro-2-[2-[3-(6-chloro-1-ethylbenz[cd]indol-2(1H)-ylidene)ethylidene]-2-phenyl-1-cyclopenten-1-ylethenyl]-1-ethylbenz[cd]indolium, having quenching consts. with diffusion-controlled values of  $2.0 \pm 0.1 \times 10^{10}$  and  $1.5 \pm 0.1 \times 10^{10}$  M<sup>-1</sup>s<sup>-1</sup>, resp. There was a trend toward increased quenching consts. for cyanine dyes with the absorption band maxima at longer wavelengths. However, the quenching consts. correlated better with the oxidation potentials of the cyanine dyes, suggesting that quenching proceeds by charge transfer rather than energy transfer. The quenching consts. for 1,1',3,3,3',3'-hexamethylindotricarbocyanine perchlorate and 1,1'-diethyl-4,4'-carbocyanine iodide were measured in several solvents as well as in aqueous solns. of detergent micelles. In different solvents, the quenching consts. varied by as much as a factor of 50. The quenching consts. were largest in solvents with the highest values on the  $\pi^*$  scale of Kamlet, Abboud, Abraham and Taft. This was consistent with quenching occurring by charge transfer. Within cells, cyanine dyes concentrate in membrane-bound organelles. The quenching consts. were substantial within detergent micelles. To the extent that micelles are models for biol. membranes, cyanine dyes may be effective biol. singlet-oxygen quenchers.

IT 605-91-4, 1,1'-Diethyl-2,2'-carbocyanine iodide 2768-90-3  
1,1'-Diethyl-2,2'-carbocyanine chloride 14187-31-6,  
1,1'-Diethyl-2,2'-dicarbocyanine iodide 14806-50-9,

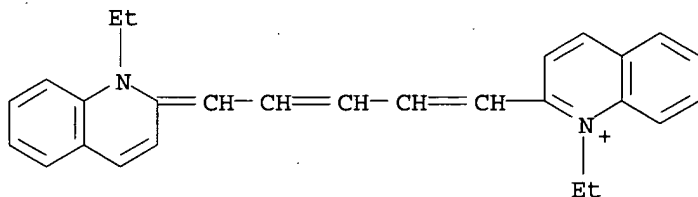
RN 2768-90-3 HCAPLUS

CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-, chloride (9CI) (CA INDEX NAME)

● Cl<sup>-</sup>

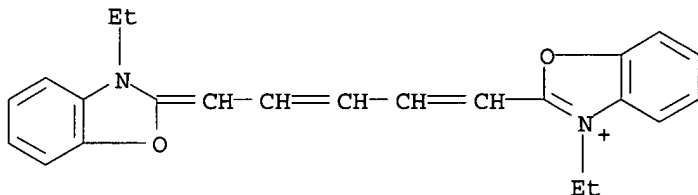
RN 14187-31-6 HCAPLUS

CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)

● I<sup>-</sup>

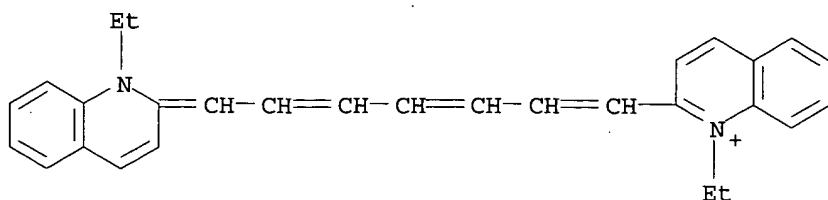
RN 14806-50-9 HCAPLUS

CN Benzoxazolium, 3-ethyl-2-[5-(3-ethyl-2(3H)-benzoxazolylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)

● I<sup>-</sup>

RN 17695-32-8 HCAPLUS

CN Quinolinium, 1-ethyl-2-[7-(1-ethyl-2(1H)-quinolinylidene)-1,3,5-



● I<sup>-</sup>

REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 21 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:278966 HCAPLUS

DOCUMENT NUMBER: 133:70811

TITLE: Cyanine dyes as protectors of K562 cells from photosensitized cell damage

AUTHOR(S): Sima, Paul D.; Kanofsky, Jeffrey R.

CORPORATE SOURCE: Research Service, Edward Hines, Jr., Department of Veterans Affairs Hospital, Hines, IL, 60141, USA  
SOURCE: Photochemistry and Photobiology (2000), 71(4), 413-421  
CODEN: PHCBAP; ISSN: 0031-8655

PUBLISHER: American Society for Photobiology

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Several cyanine dyes were found to protect K562 leukemia cells against toxicity mediated by cis-di(4-sulfonatophenyl)diphenylporphine (TPPS2) and light. Most cyanine dyes derived from dimethylindole were better photoprotectors than cyanine dyes with other structures. This correlated with the fact that cyanine dyes derived from dimethylindole were predominately monomeric at millimolar concns. within K562 cells, while other cyanine dyes formed aggregates. For cyanine dyes that are derived from dimethylindole and have absorption band wavelengths greater than 700 nm, fluorescence-energy transfer from TPPS2 to the cyanine dye was the most important mechanism for photoprotection. There was no spectroscopic evidence for complex formation between the cyanine dyes and TPPS2. The dimethylindole derivative, 1,1',3,3,3',3'-hexamethylindodicarbocyanine, was an excellent photoprotector, but a poor quencher of TPPS2 fluorescence and a relatively poor singlet-oxygen quencher. This cyanine dye may act by quenching excited triplet TPPS2. Singlet-oxygen quenching may contribute to the photoprotection provided by cyanine dyes not derived from dimethylindole. Differences in the subcellular distribution of the various cyanine dyes studied may have contributed to the different apparent mechanisms of photoprotection.

IT 2768-90-3, 1,1'-Diethyl-2,2'-carbocyanine chloride

14187-31-6, 1,1'-Diethyl-2,2'-dicarbocyanine iodide

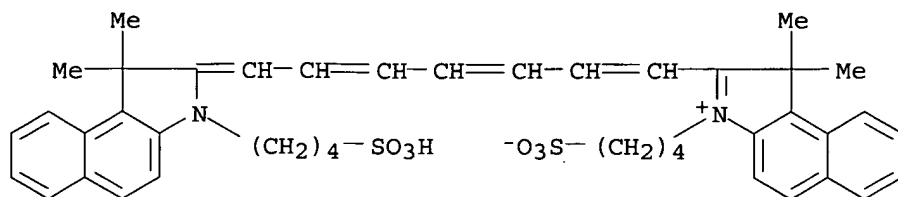
14806-50-9, 3,3'-Diethyloxadicarbocyanine iodide

17695-32-8, 1,1'-Diethyl-2,2'-quinotricarbocyanine iodide

RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)

(cyanine dyes as protectors of K562 cells from photosensitized cell damage)

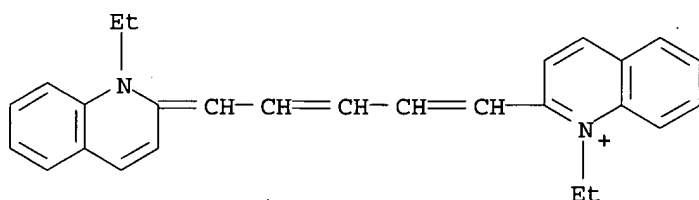
, inner salt, sodium salt (9CI) (CA INDEX NAME)



● Na

RN 14187-31-6 HCAPLUS

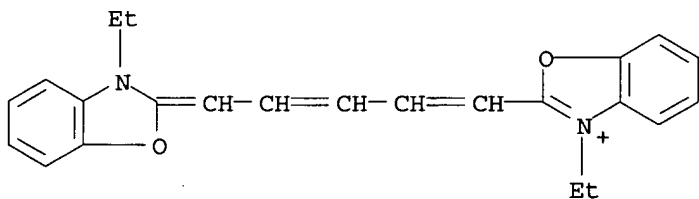
CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup> {

RN 14806-50-9 HCAPLUS

CN Benzoxazolium, 3-ethyl-2-[5-(3-ethyl-2(3H)-benzoxazolylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

RN 17695-32-8 HCAPLUS

CN Quinolinium, 1-ethyl-2-[7-(1-ethyl-2(1H)-quinolinylidene)-1,3,5-heptatrienyl]-, iodide (9CI) (CA INDEX NAME)

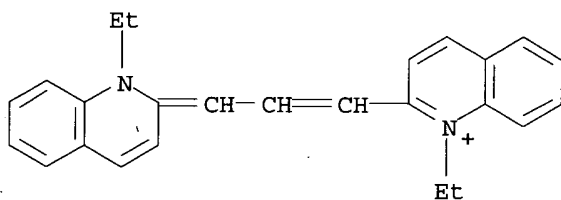
SOURCE: Fytofarmacologie, Faculteit Farmaceutische  
 Wetenschappen, Louvain, B-3000, Belg.  
 Journal of Photochemistry and Photobiology, B: Biology  
 (2000), 55(1), 27-36  
 CODEN: JPPBEG; ISSN: 1011-1344  
 PUBLISHER: Elsevier Science S.A.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB The present work has been carried out to explore the potential application of cyanines in photodynamic therapy. After photosensitization, the in vitro cytotoxic and antiproliferative activity on HeLa cells of a total of 35 cyanines belonging to several chemical subgroups is explored. Most of these cyanines have never been used before in similar exptl. work. From a first set of expts., it is found that none of the krypto-, oxa- and imidacyanines is photobiol. active on HeLa cells. Conversely, five thiacyanines (Thiac1-5), one rhodacyanine (Rhodac) and four indocyanines (Indoc2, Indoc4, Indoc5, Indoc7) show photodependent cytotoxicity or antiproliferative effects. A more detailed study shows that out of the ten selected compds., eight cyanines feature significant photodependent cytotoxic and antiproliferative effects. All possess maximum absorption ranges between 545 and 824 nm. In particular, Rhodac, a tetramethinemonomeromethine rhodacyanine dye with an absorption maximum of 655 nm (ethanol) and a molar absorption coefficient  $\epsilon=108\ 000$  shows very promising photo-dependent biol. activity. In general, the measured singlet oxygen quantum yield of the selected cyanines is low ( $<0.08$ ) and does not correlate with the degree of photosensitization. Furthermore, the present study shows that cyanines with a partition coefficient close to 1.5 accumulate to the highest extent in HeLa cells, while the more hydrophobic compds. (e.g., indocyanines) concentrate less intracellularly.

IT 605-91-4, 1,1'-Diethyl-2,2'-carbocyanine iodide 3599-32-4  
 , Indocyanine green 14187-31-6, 1,1'-Diethyl-2,2'-dicarbocyanine  
 iodide 14806-50-9, 3,3'-Diethyloxadicarbocyanine iodide  
 17695-32-8, 1,1'-Diethyl-2,2'-quinotricarbocyanine iodide  
 RL: BAC (Biological activity or effector, except adverse); BPR (Biological  
 process); BSU (Biological study, unclassified); THU (Therapeutic use);  
 BIOL (Biological study); PROC (Process); USES (Uses)  
 (cyanine dyes photosensitizing characteristics: comparative study)

RN 605-91-4 HCAPLUS

CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-,  
 iodide (9CI) (CA INDEX NAME)

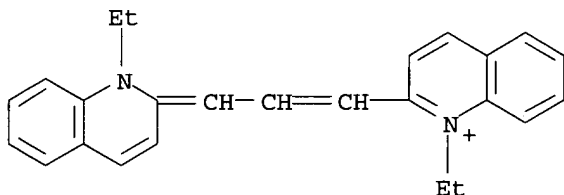


● I<sup>-</sup>

RN 3599-32-4 HCAPLUS

CN 1H-Benz[e]indolium, 2-[7-[1,3-dihydro-1,1-dimethyl-3-(4-sulfobutyl)-2H-  
 benz[e]indol-2-ylidene]-1,3,5-heptatrienyl]-1,1-dimethyl-3-(4-sulfobutyl)-

AUTHOR(S): Bhattacharyya, Ashoke Kumar; Saha, Amitabha  
CORPORATE SOURCE: Department of Chemistry, Maharaja Bir Bikram College,  
Agartala, 799 004, India  
SOURCE: Research Journal of Chemistry and Environment (2000),  
4(2), 27-32  
CODEN: RJCEF7; ISSN: 0972-0626  
PUBLISHER: Research Journal of Chemistry and Environment  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB Pinacyanol chloride (PCYN) is a cationic cyanine dye. PCYN cations on  
aggregation exhibit blue-shifted metachromatism in contrast to  
pseudoisocyanine chloride (PIC), whose cations give a red-shifted J-band.  
PCYN is an strong aggregating dye showing a prominent  $\beta$ -band at  
around 545 nm along with its  $\alpha$ -band at around 600 nm and exhibits  
multiple banded metachromatism in the presence of  $K_4Fe(CN)_6$ ,  $K_3Fe(CN)_6$ ,  
and  $NH_4VO_3$  with a  $\mu$ -band appearing at around 460 nm. Stabilities of  
metachromatic compds. of different systems, evaluated on the basis of the  
disruptive role of ethanol are found to be in order: PCYN- $K_4Fe(CN)_6$  <  
PCYN- $K_3Fe(CN)_6$  < PCYN- $NH_4VO_3$ . PCYN binds with  $K_4Fe(CN)_6$ ,  $K_3Fe(CN)_6$ , and  
 $NH_4VO_3$  in the molar ratios of .apprx. 4:1, 3:1, and 1:1 resp. A  
mechanistic model has been suggested to account for the induction of  
metachromatism in suitable cationic dyes by monoanionic substrates like  
vanadate and thermodyn. parameters for the dye-salt interactions at  
different temps. have also been evaluated. The PIC spectrum remains  
almost unperturbed in the presence of  $K_4Fe(CN)_6$ ,  $K_3Fe(CN)_6$ , and  $NH_4VO_3$ .  
IT 2768-90-3, Pinacyanol chloride  
RL: PRP (Properties); TEM (Technical or engineered material use); USES  
(Uses)  
(dye; metachromatism induced in cationic cyanine dyes by small mols.)  
RN 2768-90-3 HCAPLUS  
CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-,  
chloride (9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 20 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:414471 HCAPLUS

DOCUMENT NUMBER: 133:161345

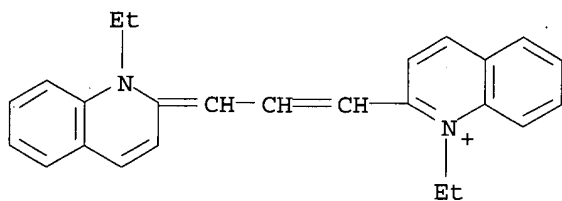
TITLE: A comparative study of the photosensitizing  
characteristics of some cyanine dyes

AUTHOR(S): Delaey, E.; Van Laar, F.; De Vos, D.; Kamuhabwa, A.;  
Jacobs, P.; De Witte, P.

CORPORATE SOURCE: Laboratorium voor Farmaceutische Biologie en

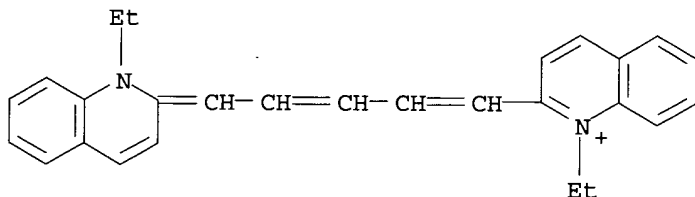
carbon-carbon bond of the polymethine chain. It was found that the isomerization potential surface depends on the polymethine chain length and its position on the quinoline moiety. The results of this study also indicate that steric hindrance associated with the rotation around a carbon-carbon bond plays an important role in the isomerization dynamics of cyanines, which correlates with the photoisomer lifetime that was measured from picosecond time-resolved fluorescence spectra.

IT 605-91-4, 1,1'-Diethyl-2,2'-carbocyanine iodide 14187-31-6  
 , DDI  
 RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)  
 (dye; AM1 semiempirical calculated potential energy surfaces for isomerization of sym. carbocyanines)  
 RN 605-91-4 HCAPLUS  
 CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

RN 14187-31-6 HCAPLUS  
 CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)

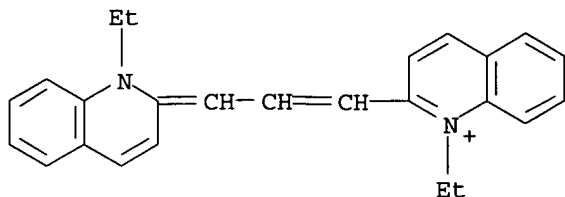


● I<sup>-</sup>

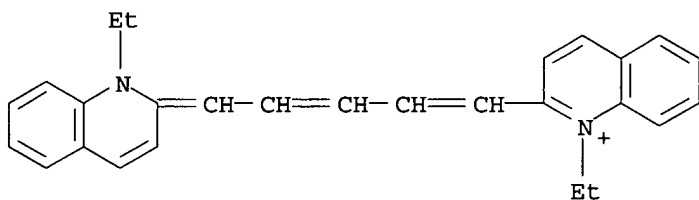
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 19 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2000:640525 HCAPLUS  
 DOCUMENT NUMBER: 134:179910  
 TITLE: Metachromasia induced in cyanine dyes by small molecules

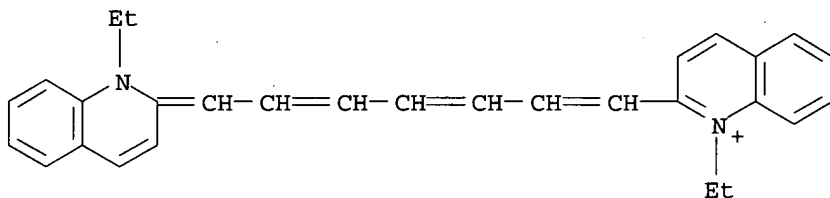




RN 37069-60-6 HCAPLUS

CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-  
(9CI) (CA INDEX NAME)

RN 37069-61-7 HCAPLUS

CN Quinolinium, 1-ethyl-2-[7-(1-ethyl-2(1H)-quinolinylidene)-1,3,5-  
heptatrienyl]- (9CI) (CA INDEX NAME)REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 18 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:729223 HCAPLUS

DOCUMENT NUMBER: 134:5903

TITLE: AM1 semiempirical calculated potential energy surfaces  
for the isomerization of symmetrical carbocyanines

AUTHOR(S): Park, Jeunghee

CORPORATE SOURCE: Department of Chemistry, Korea University, Chungnam,  
339-700, S. Korea

SOURCE: Dyes and Pigments (2000), 46(3), 155-161

CODEN: DYPIDX; ISSN: 0143-7208

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Semiempirical ground state (S0) and first excited singlet state (S1) potential surfaces were calculated for the isomerization of sym. carbocyanines such as 3,3'-diethylthiadibocyanine iodide (DTDCI), 1,1'-diethyl-2,2'-dicarbocyanine iodide (DDI), 1,1'-diethyl-2,2'-carbocyanine iodide (DCI), and cryptocyanine (1,1'-diethyl-4,4'-carbocyanine) iodide (CCI), as a function of the twist angle around a

the spectrum of the dye in the micelle. This spectrum was consistent with that of the monomer in a medium with a lower dielec. constant

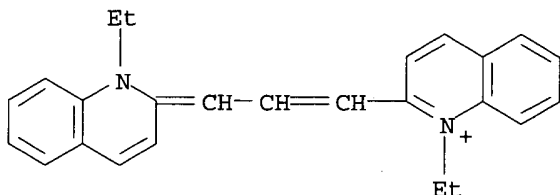
IT 605-91-4, Pinacyanol

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(dye; interaction of pinacyanol with dodecyltrimethylammonium bromide micelles)

RN 605-91-4 HCAPLUS

CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 17 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:446657 HCAPLUS

DOCUMENT NUMBER: 135:196839

TITLE: Uni-directional orientation of cyanine dye aggregates on a K4Nb6O17 single crystal: toward novel supramolecular assemblies with three-dimensional anisotropy

AUTHOR(S): Miyamoto, Nobuyoshi; Kuroda, Kazuyuki; Ogawa, Makoto  
CORPORATE SOURCE: Department of Applied Chemistry, Waseda University, Shinjuku-ku Tokyo, 169-8555, Japan

SOURCE: Journal of the American Chemical Society (2001), 123(28), 6949-6950

CODEN: JACSAT; ISSN: 0002-7863

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Cyanine dyes were adsorbed on the anisotropic surfaces of single crystals of K4Nb6O17 and the orientations of the dyes were revealed by polarized spectra.

IT 20187-38-6 37069-60-6 37069-61-7

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(dye; unidirectional orientation of cyanine dye aggregates on potassium niobium oxide)

RN 20187-38-6 HCAPLUS

CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]- (9CI) (CA INDEX NAME)

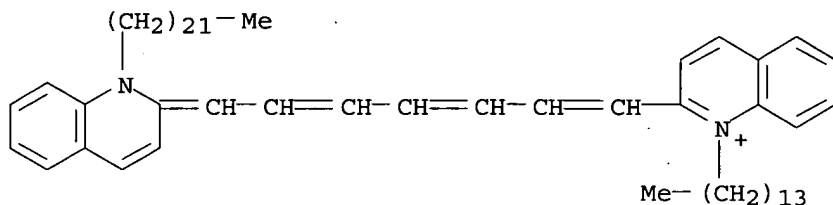
isolated from cells, and are well retained therein. Methods of using the dyes to detect stained cells both in vivo and in vitro are also disclosed.

IT 359842-03-8P

RL: ARG (Analytical reagent use); PRP (Properties); SPN (Synthetic preparation); ANST (Analytical study); PREP (Preparation); USES (Uses) (fluorescent membrane intercalating probes and methods for use)

RN 359842-03-8 HCAPLUS

CN Quinolinium, 2-[7-(1-docosyl-2(1H)-quinolinylidene)-1,3,5-heptatrienyl]-1-tetradecyl-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 16 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:672583 HCAPLUS

DOCUMENT NUMBER: 135:359142

TITLE: A spectroscopy study of the interaction of pinacyanol with n-dodecyltrimethylammonium bromide micelles

AUTHOR(S): Sabate, Raimon; Gallardo, Montserrat; de la Maza, Alfonso; Estelrich, Joan

CORPORATE SOURCE: Departament de Fisicoquímica Facultat de Farmàcia, Universitat de Barcelona, Barcelona, E-08028, Spain

SOURCE: Langmuir (2001), 17(21), 6433-6437

CODEN: LANGD5; ISSN: 0743-7463

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

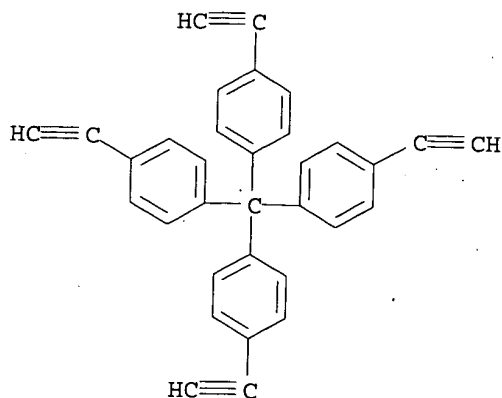
LANGUAGE: English

AB The interaction of pinacyanol (PIN), a cyanine dye, with dodecyltrimethylammonium bromide (DTAB) in the aqueous micellar concentration range

was studied by visible spectrophotometry. As PIN is present in aggregate and nonaggregate forms, we aimed to determine the dimerization constant ( $K_D = 35,000 \text{ M}^{-1}$ ) by nonlinear regression fitting of the exptl. spectra and then by the resolution of such spectra in terms of pure monomer and dimer states. Each state was deconvoluted into three Gaussian bands. These functions fit the spectral data. Interaction of PIN with micellar DTAB produced a bathochromic shift of all the spectral bands and increased the most red-shifted band. Spectral data showed that the dye is bound into the micelle in the monomeric form. On the other hand, micellization reduced the dimerization process. The binding of the dye to micelles is defined by an association constant ( $K_A = 2160 \text{ M}^{-1}$ ). In such binding, 1 is the maximum

number

of PIN mols. that each micelle can accommodate. The association constant allowed us to calculate the fraction of micellized PIN, from which we deduced



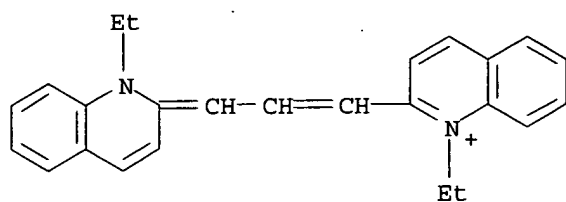
REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 15 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2001:676637 HCAPLUS  
 DOCUMENT NUMBER: 135:238960  
 TITLE: Fluorescent membrane intercalating probes and methods for their use  
 INVENTOR(S): Gray, Brian D.  
 PATENT ASSIGNEE(S): Phanos Technologies, Inc., USA  
 SOURCE: PCT Int. Appl., 48 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001066153	A1	20010913	WO 2001-US6923	20010305
W:			AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM	
RW:			GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG	
CA 2402352	AA	20010913	CA 2001-2402352	20010305
EP 1265640	A1	20021218	EP 2001-918334	20010305
R:			AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR	
JP 2003525915	T2	20030902	JP 2001-564805	20010305
US 2003223935	A1	20031204	US 2002-220241	20021101
PRIORITY APPLN. INFO.:			US 2000-186682P	P 20000303
			WO 2001-US6923	W 20010305

OTHER SOURCE(S): MARPAT 135:238960

AB The invention relates to a family of cyanine dyes which fluoresce in the far red and near *infra* red wavelengths of the spectrum and preferably possess lipophilic side chains. The dyes of the invention are soluble in com. available membrane staining vehicles, are useful as probes for rapidly staining lipophilic structures such as membranes in cells or



CM 2

CRN 383155-27-9

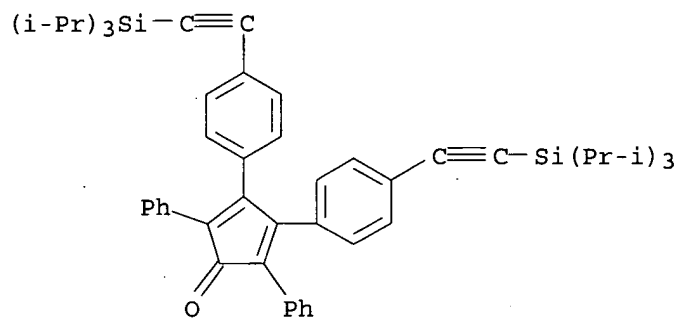
CMF (C51 H60 O Si2 . C33 H20)x

CCI PMS

CM 3

CRN 189619-39-4

CMF C51 H60 O Si2



CM 4

CRN 177991-01-4

CMF C33 H20

Cotlet, Mircea; van der Auweraer, Marc; Mullen, Klaus;  
de Schryver, Frans C.  
CORPORATE SOURCE: Department of Chemistry, Katholieke Universiteit  
Leuven, Louvain, 3001, Belg.  
SOURCE: Chemistry--A European Journal (2001), 7(19), 4126-4133  
CODEN: CEUJED; ISSN: 0947-6539  
PUBLISHER: Wiley-VCH Verlag GmbH  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB We report on a single-mol. study of a host - guest system that consists of a second-generation polyphenylene dendrimer and the cyanine dye pinacyanol. The use of single-mol. spectroscopy enables us to obtain more detailed information on the properties of the host-guest system and can be used to confirm solution data. At low dye to dendrimer ratios the system is present as a one-to-one complex, while for higher ratios an ion-pair system is formed. Changes in the spectral properties of the single mols. are explained by differences in local polarizability. The difference of the triplet lifetimes of single free dye mols. and of associated ones is interpreted as deriving from a larger free volume for the dye mols. in the dendritic host relative to the rigid polymer matrix.

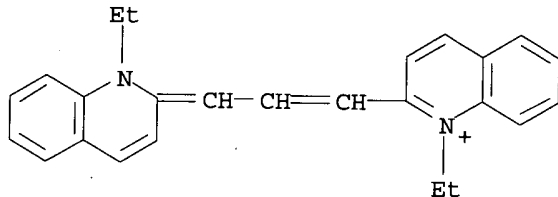
IT 605-91-4, Pinacyanol

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(dye; effect of dendrimer complexation on triplet lifetimes of single mols. of)

RN 605-91-4 HCAPLUS

CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

IT 383155-28-0P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (single-mol. spectroscopy of dendrimer-based host-guest system)

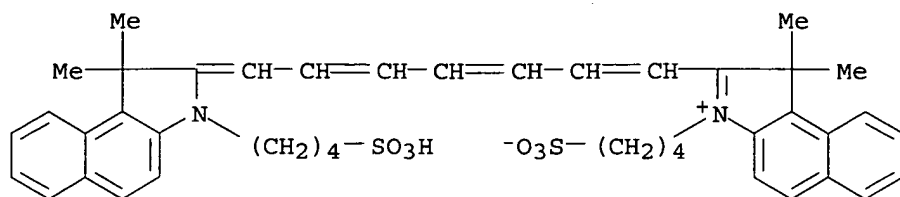
RN 383155-28-0 HCAPLUS

CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-, iodide, compd. with 2,5-diphenyl-3,4-bis[4-[[tris(1-methylethyl)silyl]ethynyl]phenyl]-2,4-cyclopentadien-1-one polymer with 1,1',1'',1'''-methanetetrayltetrakis[4-ethynylbenzene] (9CI) (CA INDEX NAME)

CM 1

CRN 605-91-4

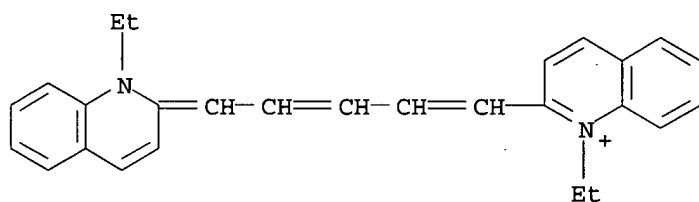
CMF C25 H25 N2 . I



● Na

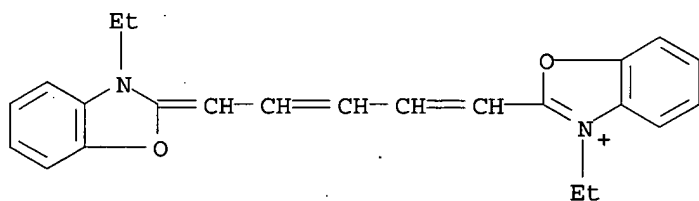
RN 14187-31-6 HCAPLUS

CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)

● I<sup>-</sup>

RN 14806-50-9 HCAPLUS

CN Benzoxazolium, 3-ethyl-2-[5-(3-ethyl-2(3H)-benzoxazolylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)

● I<sup>-</sup>

L29 ANSWER 14 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:757479 HCAPLUS

DOCUMENT NUMBER: 136:55218

TITLE: Single-molecule spectroscopy of a dendrimer-based host - guest system

AUTHOR(S): Kohn, Fabian; Hofkens, Johan; Wiesler, Uwe-Martin;

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 13 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2001:793870 HCAPLUS

DOCUMENT NUMBER: 135:366150

TITLE: Method for dyeing or labeling analytical samples with quantum dots or dendrimers containing fluorescent groups

INVENTOR(S): Iketaki, Yoshinori; Fujii, Masaaki; Omatsu, Takashige; Suzuki, Tomoo; Minakata, Makoto; Yamamoto, Kimitoshi; Nakaya, Kazuhiko

PATENT ASSIGNEE(S): Olympus Optical Co., Ltd., Japan; Nippon Roper K. K.; Foundation for Scientific Technology Promotion

SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

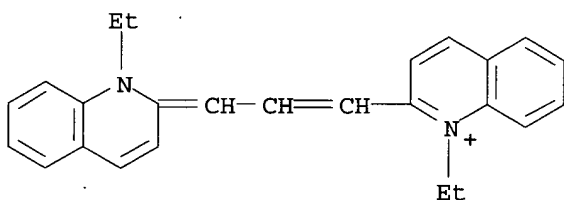
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001305030	A2	20011031	JP 2000-118633	20000419
PRIORITY APPLN. INFO.:			JP 2000-118633	20000419
AB The method gives samples which can be detected by double-resonance absorption microscope at an ultrahigh resolution				
IT 605-91-4, 1,1'-Diethyl-2,2'-carbocyanine Iodide 3599-32-4				
, IR 125 14187-31-6, 1,1'-Diethyl-2,2'-dicarbocyanine Iodide 14806-50-9, 3,3'-Diethyloxadicarbocyanine Iodide				
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses) (labeling agent; method for dyeing or labeling anal. samples with quantum dots or dendrimers containing fluorescent groups)				
RN 605-91-4 HCAPLUS				
CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-, iodide (9CI) (CA INDEX NAME)				

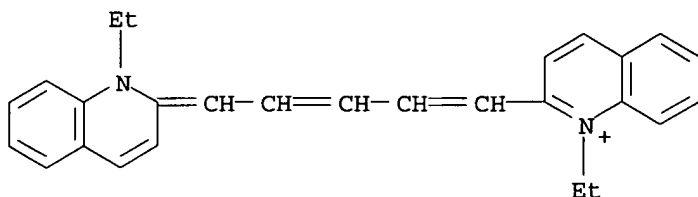


● I<sup>-</sup>

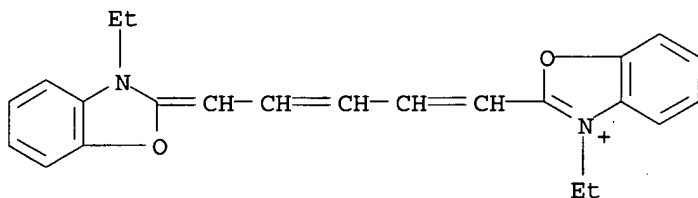
RN 3599-32-4 HCAPLUS

CN 1H-Benz[e]indolium, 2-[7-[1,3-dihydro-1,1-dimethyl-3-(4-sulfobutyl)-2H-benz[e]indol-2-ylidene]-1,3,5-heptatrienyl]-1,1-dimethyl-3-(4-sulfobutyl)-, inner salt, sodium salt (9CI) (CA INDEX NAME)

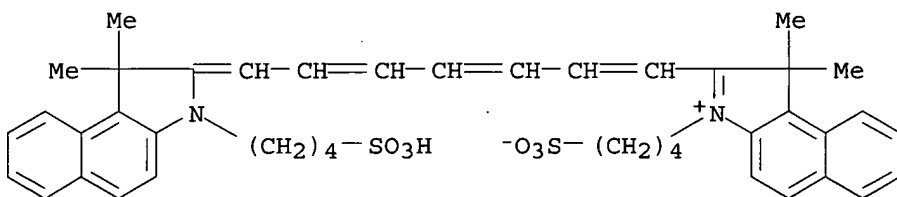


● I<sup>-</sup>

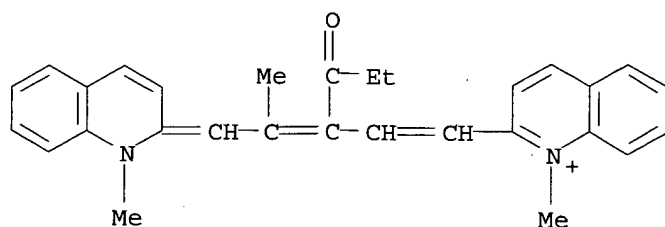
IT 14806-50-9, 3,3'-Diethyloxadicarbocyanine iodide  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (DODCI, fluorescent dye; fluorescent tag for detection of residual photoresist during resist processing)  
 RN 14806-50-9 HCAPLUS  
 CN Benzoxazolium, 3-ethyl-2-[5-(3-ethyl-2(3H)-benzoxazolyliidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)

● I<sup>-</sup>

IT 3599-32-4  
 RL: NUU (Other use, unclassified); USES (Uses)  
 (IR 125, fluorescent dye; fluorescent tag for detection of residual photoresist during resist processing)  
 RN 3599-32-4 HCAPLUS  
 CN 1H-Benz[e]indolium, 2-[7-[1,3-dihydro-1,1-dimethyl-3-(4-sulfobutyl)-2H-benz[e]indol-2-ylidene]-1,3,5-heptatrienyl]-1,1-dimethyl-3-(4-sulfobutyl)-, inner salt, sodium salt (9CI) (CA INDEX NAME)



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REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 12 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:6389 HCAPLUS

DOCUMENT NUMBER: 136:93482

TITLE: Modification of resist and/or resist processing with fluorescence detection

INVENTOR(S): Somerville, Linda K.; Holscher, Richard D.;  
Somerville, Kenneth H.

PATENT ASSIGNEE(S): Micron Technology, Inc., USA

SOURCE: U.S., 6 pp.

CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6335531	B1	20020101	US 1999-291652	19990406
PRIORITY APPLN. INFO.:			US 1999-291652	19990406

AB The invention relates to integrated circuit fabrication and to the detection of residual photoresist through fluorescence. The detection of photoresist is improved by the addition of materials to enhance the fluorescence of photoresist such that residual photoresist that either does not fluoresce or fluoresces at an emission wavelength shorter than that can be detected using existing automatic resist inspection tools. In one embodiment of the invention, a benign tag that does not interfere with the photochem. of the photoresist is added to the photoresist before it is processed. In a 2nd embodiment of the invention, a tag is introduced onto a surface on which residual photoresist may be present such that the tag is absorbed or adsorbed by the residual photoresist, thus rendering the residual photoresist easily detectable. The tag may be introduced into the surface in a solution

IT 14187-31-6

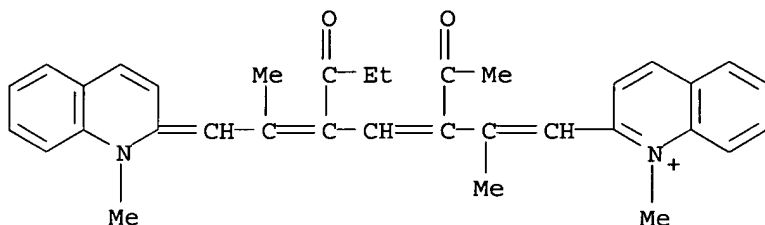
RL: NUU (Other use, unclassified); USES (Uses)  
(DDI, fluorescent dye; fluorescent tag for detection of residual photoresist during resist processing)

RN 14187-31-6 HCAPLUS

CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)

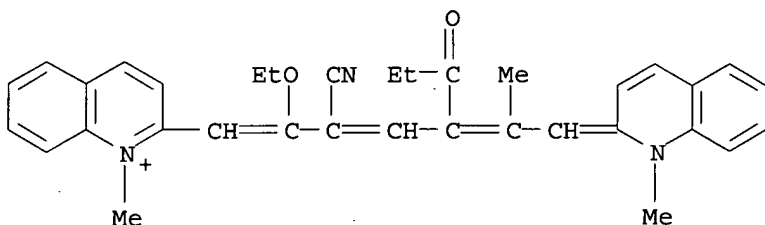
RN 417708-45-3 HCAPLUS

CN Quinolinium, 2-[3-acetyl-2-methyl-5-[1-methyl-2-(1-methyl-2(1H)-quinolinylidene)ethylidene]-6-oxo-1,3-octadienyl]-1-methyl-, iodide (9CI)  
(CA INDEX NAME)

● I<sup>-</sup>

RN 417708-46-4 HCAPLUS

CN Quinolinium, 2-[3-cyano-2-ethoxy-5-[1-methyl-2-(1-methyl-2(1H)-quinolinylidene)ethylidene]-6-oxo-1,3-octadienyl]-1-methyl-, iodide (9CI)  
(CA INDEX NAME)

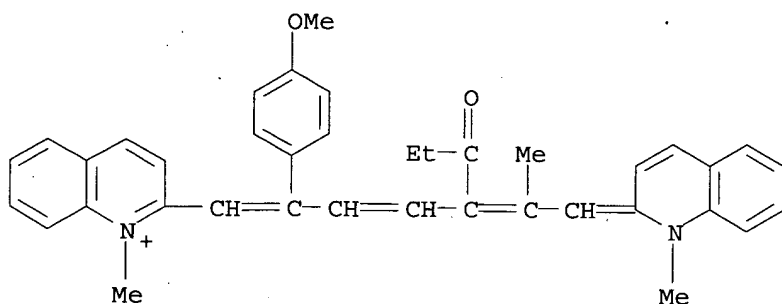
● I<sup>-</sup>

IT 417708-49-7P

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(pentamethine cyanine dye; preparation and absorption spectra of polymethine cyanine dyes)

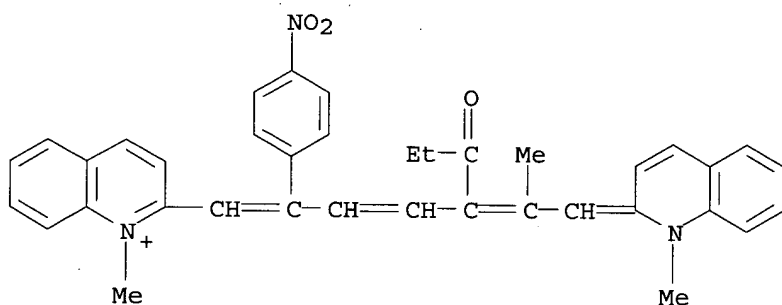
RN 417708-49-7 HCAPLUS

CN Quinolinium, 1-methyl-2-[3-[1-methyl-2-(1-methyl-2(1H)-quinolinylidene)ethylidene]-4-oxo-1-hexenyl]-, iodide (9CI) (CA INDEX NAME)

● I<sup>-</sup>

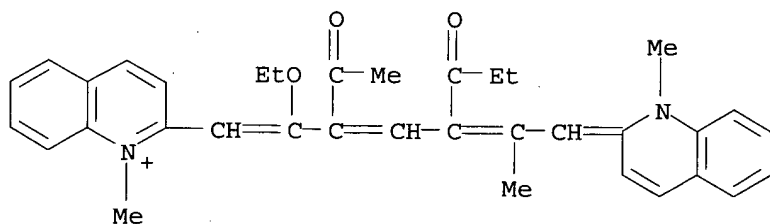
RN 417708-43-1 HCAPLUS

CN Quinolinium, 1-methyl-2-[5-[1-methyl-2-(1-methyl-2(1H)-quinolinylidene)ethylidene]-2-(4-nitrophenyl)-6-oxo-1,3-octadienyl]-, iodide (9CI) (CA INDEX NAME)

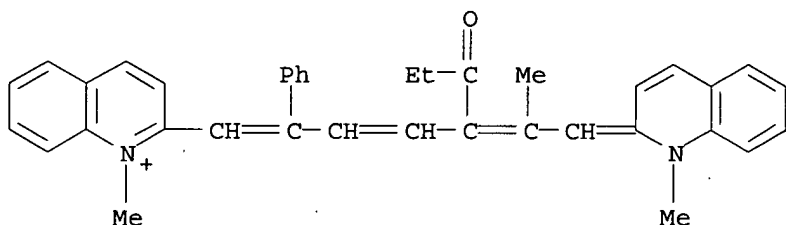
● I<sup>-</sup>

RN 417708-44-2 HCAPLUS

CN Quinolinium, 2-[3-acetyl-2-ethoxy-5-[1-methyl-2-(1-methyl-2(1H)-quinolinylidene)ethylidene]-6-oxo-1,3-octadienyl]-1-methyl-, iodide (9CI) (CA INDEX NAME)

● I<sup>-</sup>

- AB The reaction of a ratio of 1 mol of Et 2-chloro-1-formylcrotonate (I) with 2 mol of an appropriate 2(4)-heterocyclic quaternary salts afforded pentamethine cyanine dyes. Condensation reaction of I with aromatic amines followed by reaction with 2(4)-heterocyclic quaternary salts resulted in aza-tetramethine cyanine dyes. Condensation of I with active methylene compds. and acetophenone derivs., followed by reaction with 2 mol 2-methylquinoline methiodide afforded the corresponding heptamethine cyanine dyes. The structures of the novel compds. were established by elemental anal., visible/near-IR absorption, IR, <sup>1</sup>H NMR spectroscopy, and mass spectra. Absorption of electromagnetic radiation of some of the polymethine dyes was studied. The relationship between the constitution and properties of these dyes has been studied.
- IT 417708-41-9P 417708-42-0P 417708-43-1P  
417708-44-2P 417708-45-3P 417708-46-4P  
RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(heptamethine cyanine dye; preparation and absorption spectra of polymethine cyanine dyes)
- RN 417708-41-9 HCAPLUS
- CN Quinolinium, 1-methyl-2-[5-[1-methyl-2-(1-methyl-2(1H)-quinolinylidene)ethylidene]-6-oxo-2-phenyl-1,3-octadienyl]-, iodide (9CI)  
(CA INDEX NAME)



- RN 417708-42-0 HCAPLUS
- CN Quinolinium, 2-[2-(4-methoxyphenyl)-5-[1-methyl-2-(1-methyl-2(1H)-quinolinylidene)ethylidene]-6-oxo-1,3-octadienyl]-1-methyl-, iodide (9CI)  
(CA INDEX NAME)

CORPORATE SOURCE: Polish Academy of Sciences, Institute of Low Temperature and Structure Research, Warsaw, 50-950, Pol.

SOURCE: Journal of Molecular Structure (2002), 610(1-3), 187-190  
CODEN: JMOSB4; ISSN: 0022-2860

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

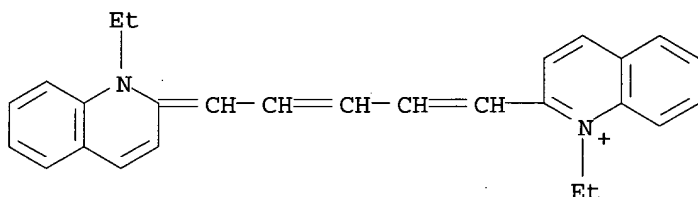
LANGUAGE: English

AB Absorption spectra of 1,1'-diethyl-2,2'-dicarbocyanine iodide (DDI) have been obtained in 1:9 volume ethanol/water mixts. An increase of ionic strength obtained by addition of NaCl to the solvent mixture leads to the appearance of a new absorption band at 849 nm. The intensity of this band increases with salt concentration which suggests that this spectral feature is related to a DDI aggregate. However, no emission has been observed with excitation at 850 nm, indicating that this feature does not correspond to a J-type aggregate. Addition of NaCl to DDI solns. possessing the EtOH/H<sub>2</sub>O ratio different from 1:9 does not induce appearance of the new absorption band.

IT **14187-31-6**, 1,1'-Diethyl-2,2'-dicarbocyanine iodide  
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)  
(dye; aggregation and spectra in aqueous ethanol solns. with high ionic strength)

RN 14187-31-6 HCAPLUS

CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)



REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 11 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:20964 HCAPLUS

DOCUMENT NUMBER: 136:342123

TITLE: Synthesis and absorption spectra of new polymethine cyanine dyes

AUTHOR(S): Abd El-Aal, Reda Mahmoud

CORPORATE SOURCE: Chemistry Department, Aswan Faculty of Science, South Valley University, Aswan, 81528, Egypt

SOURCE: Dyes and Pigments (2002), 52(2), 129-136  
CODEN: DYPIDX; ISSN: 0143-7208

PUBLISHER: Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

CORPORATE SOURCE: R.; O'Neal, Ryan  
Department of Chemistry, North Carolina State  
University, Raleigh, NC, 27695, USA

SOURCE: Journal of Physical Chemistry A (2002), 106(28),  
6533-6540  
CODEN: JPCAFH; ISSN: 1089-5639

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

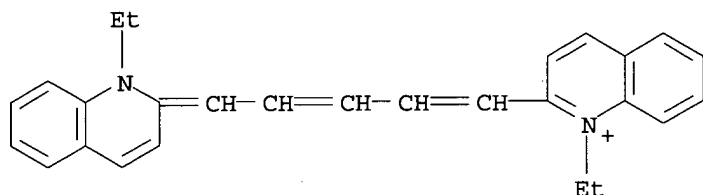
AB Despite the well known relationship between the resonance Raman excitation profile and the absorption line shape, there is scant exptl. evidence for effects in absorption or fluorescence spectroscopy related to the observations of surface-enhanced Raman scattering (SERS). On the other hand, numerous Raman studies have been done on the SERS phenomenon, where large enhancement factors have been determined. In this work, the absorption properties of mols. adsorbed on single gold and silver nanoparticles (monomers) have been investigated, with particular emphasis on an examination of the effect on the spectrum of the adsorbate. A number of the adsorbates studied are similar to those reported in SERS studies. The adsorbates can be divided into two classes according to the nature of the interaction with the adsorbent. Class I shows little change in the absorption spectrum. Class II shows a large reduction in absorption. The only examples of an increase in absorption arise from solvatochromic effects. The implication of these observations for the mechanism of SERS is discussed.

IT 14187-31-6, 1,1'-Diethyl-2,2'-dicarbocyanine iodide

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)  
(dye; optical properties of dye mols. adsorbed on single gold and silver nanoparticles)

RN 14187-31-6 HCAPLUS

CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)



REFERENCE COUNT: 78 THERE ARE 78 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

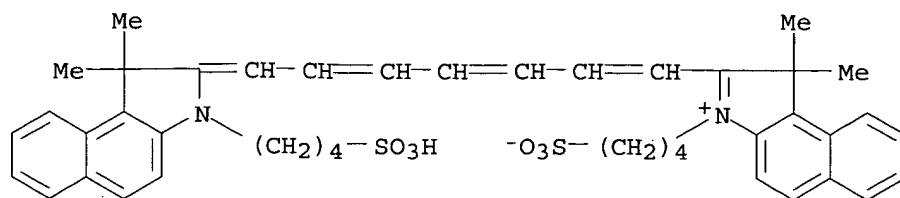
L29 ANSWER 10 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:299997 HCAPLUS

DOCUMENT NUMBER: 137:141840

TITLE: Spectroscopic behavior of 1,1'-diethyl-2,2'-dicarbocyanine iodide in ethanol/water solutions with high ionic strength

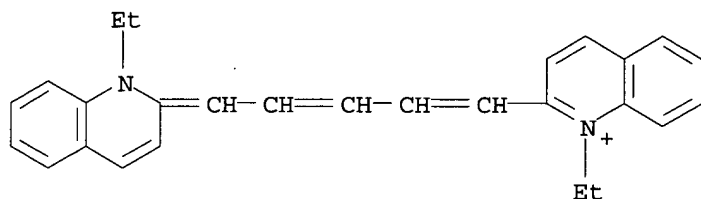
AUTHOR(S): Maruszewski, Krzysztof; Jasiorski, Marek; Strek, Wieslaw



● Na

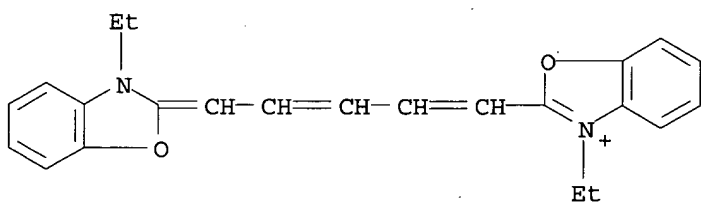
RN 14187-31-6 HCAPLUS

CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)

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RN 14806-50-9 HCAPLUS

CN Benzoxazolium, 3-ethyl-2-[5-(3-ethyl-2(3H)-benzoxazolylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)

● I<sup>-</sup>

L29 ANSWER 9 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:469858 HCAPLUS

DOCUMENT NUMBER: 137:141842

TITLE: Optical properties of dye molecules adsorbed on single gold and silver nanoparticles

AUTHOR(S): Franzen, Stefan; Folmer, Jacob C. W.; Glomm, Wilhelm



US 2002135758  
US 6538725

A1 20020926  
B2 20030325

US 2001-765757

20010122

## PRIORITY APPLN. INFO.:

US 2001-765757

A 20010122

AB Methods for quantifying inherent structural defects of a coating composition on a given substrate are discussed which entail providing  $\geq 1$  coating sample in which  $\geq 1$  colorimetric or luminescent material is incorporated; irradiating the coating sample with light of a preselected wavelength, before, during and/or after subjecting the sample to  $\geq 1$  structural defect-inducing test; collecting spectral data emitted from the sample; and applying a predetd. test to the spectral data to determine whether the sample meets preselected criteria. Methods for quantifying interdiffusion of a coating into a given substrate are also described in which the step of collecting spectral data emitted from the sample is followed by comparing a steady state spectral data baseline achieved after removal of the coating to spectral data acquired by irradiation of an uncoated substrate. A method for quantifying interdiffusion of a substrate into a coating is also discussed.

IT 605-91-4, 1,1'-Diethyl-2,2'-carbocyanine Iodide 3599-32-4

, IR 125 14187-31-6, 1,1'-Diethyl-2,2'-dicarbocyanine

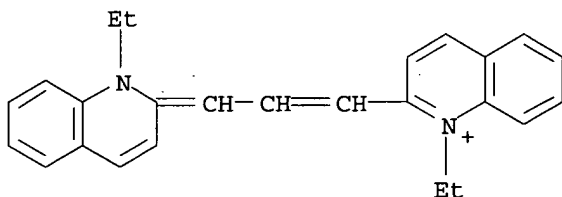
Iodide 14806-50-9, 3,3'-Diethyloxadicarbocyanine Iodide

RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(luminescent or colorimetric material; method for determination of structural defects of coatings using)

RN 605-91-4 HCAPLUS

CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-, iodide (9CI) (CA INDEX NAME)



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RN 3599-32-4 HCAPLUS

CN 1H-Benz[e]indolium, 2-[7-[1,3-dihydro-1,1-dimethyl-3-(4-sulfobutyl)-2H-benz[e]indol-2-ylidene]-1,3,5-heptatrienyl]-1,1-dimethyl-3-(4-sulfobutyl)-, inner salt, sodium salt (9CI) (CA INDEX NAME)

DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB Association of cationic and anionic quinocyanine dyes was studied by applying high pressure to the dye solns. The absorption spectra of 4 dye solns. were measured at pressures up to 600 MPa. The spectra varied intensively with pressure increase. This was interpreted in terms of the association of aqueous dye induced by pressure. The phys. properties of the dyes are discussed.

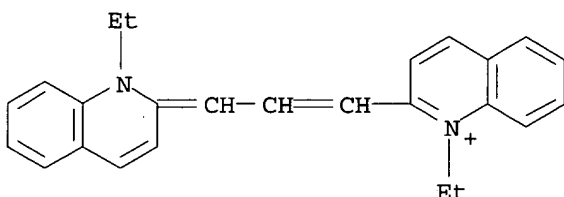
IT 20187-38-6

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(dye; association of quinocyanine dyes in solution under high pressure)

RN 20187-38-6 HCAPLUS

CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 8 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:696234 HCAPLUS

DOCUMENT NUMBER: 137:239406

TITLE: Method for determination of structural defects of coatings

INVENTOR(S): Potyrailo, Radislav Alexandrovich; Olson, Daniel Robert; Brennan, Michael Jarlath, Jr.; Cawse, James Norman; Chisholm, Bret Ja

PATENT ASSIGNEE(S): General Electric Company, USA

SOURCE: PCT Int. Appl., 54 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

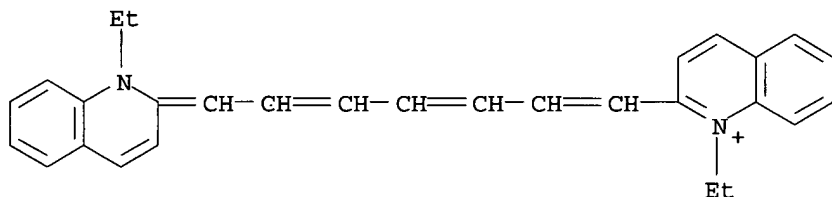
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002071045	A2	20020912	WO 2001-US50362	20011026
WO 2002071045	A3	20030417		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				

AUTHOR(S): Kasatani, Kazuo  
 CORPORATE SOURCE: Faculty of Engineering, Department of Advanced Materials Science and Engineering, Yamaguchi University, Tokiwadai, Ube, 755-8611, Japan  
 SOURCE: Optical Materials (Amsterdam, Netherlands) (2003), 21(1-3), 93-97  
 CODEN: OMATET; ISSN: 0925-3467  
 PUBLISHER: Elsevier Science B.V.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB 'Third-order optical nonlinearities of several cyanine dyes were measured under resonant conditions by the femtosecond degenerate four-wave mixing (DFWM) technique. Temporal profiles of the DFWM signal were measured with a time resolution of 0.3 ps, and were found to consist of at least two components, the coherent instantaneous nonlinear response and the delayed response with a decay time constant of several hundred picoseconds. The latter can be attributed to mol. rotational relaxation of these dyes. The values of electronic component of the optical nonlinear susceptibility,  $\chi^{(3)}$ , for these dyes were  $\approx 2 \times 10^{-12}$  esu at the very low concentration of  $1 \times 10^{-5}$  mol dm<sup>-3</sup>. The electronic component of mol. hyperpolarizability,  $\gamma_e$ , was calculated to be  $\approx 1 \times 10^{-28}$  esu for each dye.  
 IT 17695-32-8, NK-123  
 RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)  
 (cyanine dye; large electronic third-order optical nonlinearities of)  
 RN 17695-32-8 HCAPLUS  
 CN Quinolinium, 1-ethyl-2-[7-(1-ethyl-2(1H)-quinolinylidene)-1,3,5-heptatrienyl]-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 7 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 2002:766520 HCAPLUS  
 DOCUMENT NUMBER: 138:206472  
 TITLE: Association of quinocyanine dyes under high pressure  
 AUTHOR(S): Iwasaki, Masashi; Tai, Katsuki; Okamoto, Masami  
 CORPORATE SOURCE: Dep. Chem. Materials Technology, Kyoto Inst. Technology, Matsugasaki, Sakyo-ku, Kyoto, 606-8585, Japan  
 SOURCE: Nippon Shashin Gakkaishi (2002), 65(4), 291-294  
 CODEN: NSGKAP; ISSN: 0369-5662  
 PUBLISHER: Nippon Shashin Gakkai

TITLE: Excitation energy transfer in dendritic host-guest donor-acceptor systems  
AUTHOR(S): Kohn, Fabian; Hofkens, Johan; Gronheid, Roel; Cotlet, Mircea; Mullen, Klaus; Van der Auweraer, Mark; De Schryver, Frans C.  
CORPORATE SOURCE: Department of Chemistry, Laboratory for Photochemistry and Spectroscopy, Katholieke Universiteit Leuven, Louvain, 3001, Belg.  
SOURCE: ChemPhysChem (2002), 3(12), 1005-1013  
CODEN: CPCHFT; ISSN: 1439-4235  
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB We report on a study of a phys. formed host-guest system, which was designed to be investigated by fluorescence energy transfer. All donor and acceptor mols. used were cyanine dyes. Investigation was performed at the ensemble level as well as at the single-mol. level. The ensemble measurements revealed a distribution of binding sites as well for the donor as for the acceptor. Accordingly, we found a distribution of the energy transfer efficiency. At the single-mol. level, these distributions are still present. We could discriminate entities that show very efficient energy transfer, some that do not show any energy transfer and systems whose energy transfer efficiency is only about 50%. The latter allowed the time-resolved detection of energy transfer of single entities through the acceptor decay. Finally, we discuss the observation that the energy transfer efficiency fluctuates as a function of time.

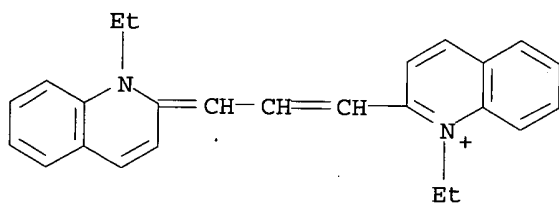
IT 2768-90-3

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(cyanine dye; excitation energy transfer in dendritic host-guest donor-acceptor systems containing)

RN 2768-90-3 HCAPLUS

CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-, chloride (9CI) (CA INDEX NAME)



● Cl<sup>-</sup>

REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 6 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2002:893920 HCAPLUS

DOCUMENT NUMBER: 139:70438

TITLE: Large electronic third-order optical nonlinearities of cyanine dyes measured by resonant femtosecond degenerate four-wave mixing

TITLE: Determination of micellar microenvironment of pinacyanol by visible spectroscopy

AUTHOR(S): Sabate, Raimon; Estelrich, Joan

CORPORATE SOURCE: Departament de Fisicoquímica, Facultat de Farmàcia, Universitat de Barcelona, Barcelona, Catalonia, 08028, Spain

SOURCE: Journal of Physical Chemistry B (2003), 107(17), 4137-4142

CODEN: JPCBFK; ISSN: 1520-6106

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The interaction of pinacyanol (PIN, a cationic cyanine dye), with Triton X-100, sodium dodecyl sulfate, and Cl-16-alkyltrimethylammonium bromide micelles was studied by visible spectrophotometry. PIN exists as a monomer and in aggregated form (dimers, trimers, and higher aggregates) in aqueous solution, but dimers and higher aggregates were split into monomers in the presence of surfactants (or on addition of organic solvents). The interaction of PIN with any kind of micelles produced a bathochromic shift of all of the spectral bands and increased the most red-shifted band. The deconvolution of each exptl. spectrum into three bands allowed the calcn. of the molar absorptivity of any band. The extent of the binding of the dye to micelles can be measured by the association constant. The highest value of this was achieved with anionic, then with nonionic, and, finally, with cationic micelles. In the latter, the higher the length of the hydrophobic chain, the higher the association constant. By comparing the wavelength shifts in micellar systems with those observed in organic solvents, it was possible to assign a kind of microenvironment of PIN in the micelle.

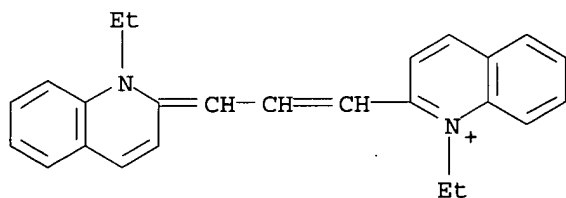
IT 605-91-4, Pinacyanol

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(dye; determination of micellar microenvironment of pinacyanol by visible spectroscopy)

RN 605-91-4 HCAPLUS

CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylydene)-1-propenyl]-, iodide (9CI) (CA INDEX NAME)



● I -

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L29 ANSWER 5 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:10833. HCAPLUS

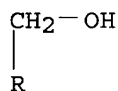
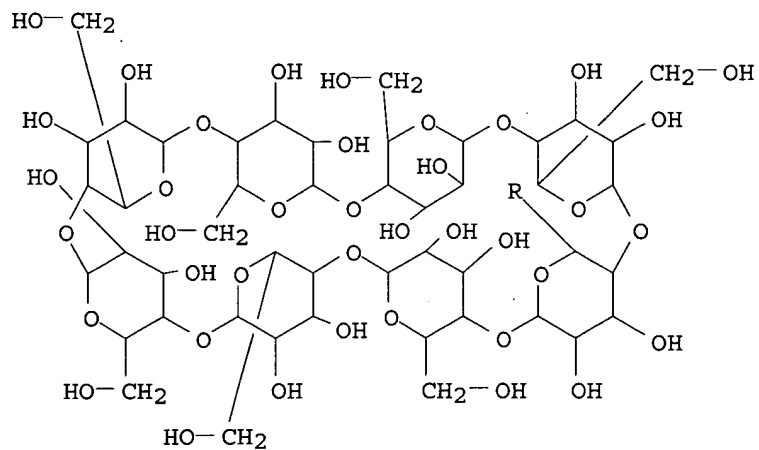
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NAME)

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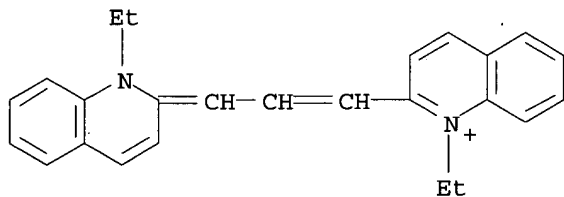
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CM 2

CRN 2768-90-3

CMF C25 H25 N2 . Cl

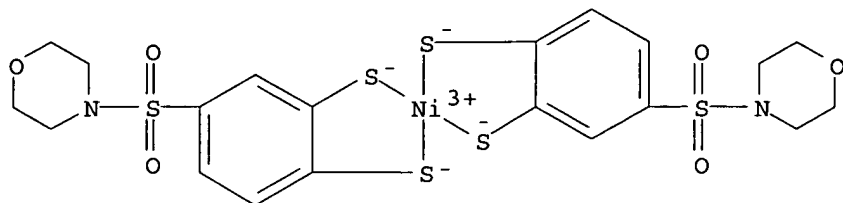
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L29 ANSWER 4 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:266418 HCAPLUS

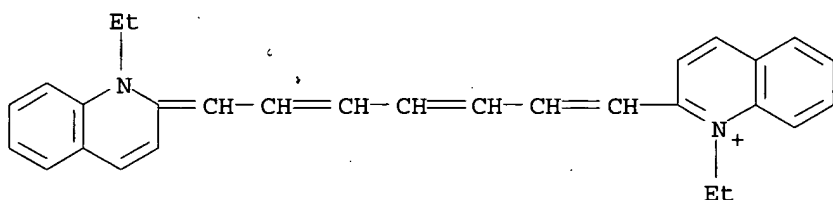
DOCUMENT NUMBER: 138:403070



CM 2

CRN 37069-61-7

CMF C29 H29 N2



L29 ANSWER 3 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:494996 HCAPLUS

DOCUMENT NUMBER: 139:165852

TITLE: Inclusion complexes of dyes and cyclodextrins: modeling supermolecules by rigorous quantum mechanics

AUTHOR(S): Adeagbo, W. A.; Buss, V.; Entel, P.

CORPORATE SOURCE: Institute of Theoretical Physics, Gerhard-Mercator University, Duisburg, 47048, Germany

SOURCE: Journal of Inclusion Phenomena and Macrocyclic Chemistry (2002), Volume Date 2003, 44(1-4), 203-205  
CODEN: JIPCF5; ISSN: 1388-3127

PUBLISHER: Kluwer Academic Publishers

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The results of structure optimization and mol. dynamics simulation of host-guest 1:2  $\gamma$ -cyclodextrin-pinacyanol chloride dye inclusion complexes are obtained by applying a d. functional based tight-binding code. The results attempt to correlate UV/visible and CD spectral data with calculated aggregate structures of the sandwich dimer, with the monomers twisted slightly against each other. The sense of twist is predetd. by the chirality of the complexing host. The UV/visible spectra are interpreted using the exciton model. Within this model, each excited state of the monomer generates two excitonic states in the dimer. The interaction between the two monomers results then in a Davydov splitting of the two dimer states. The opposite signs of the two dimer states can be attributed to the twist of the monomers when they interact.

IT 577794-42-4

RL: PRP (Properties)

(d.-functional modeling of inclusion complexes of dyes and cyclodextrins)

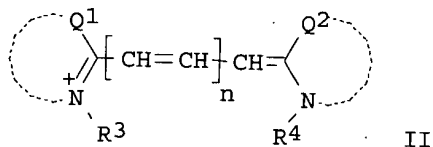
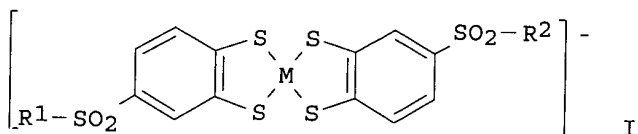
RN 577794-42-4 HCAPLUS

CN  $\gamma$ -Cyclodextrin, compd. with 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]quinolinium chloride (1:2) (9CI) (CA INDEX

FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003221523	A2	20030808	JP 2002-23397	20020131
PRIORITY APPLN. INFO.:			JP 2002-23397	20020131
OTHER SOURCE(S):			MARPAT 139:165857	

GI



AB Title pigments comprise ionic conjugates of substituted benzene dithiol metal anion I and cyano dye cation II, wherein R1, R2 = C1-6 alkyl, C1-8 alkylamino, (substituted) morpholino, piperidino, pyrrolidino, thiomorpholino, piperazino, or Ph group; R3, R4 = C1-8 alkyl; M = transition metals; Q1, Q2 = atom group for nitrogen-containing 5 or 6-membered hetero ring formation which may contain fused rings; and n = 2-4 integer. Thus, 59.2 g 4-(morpholinosulfonyl)-1,2-dichlorobenzene and 6.7 g sulfur were reacted at 90-95° for 6 h, 22.9 g nickel chloride was added therein and reacted to give 36.6 g benzene dithiol nickel complex with absorption maximum at 858 nm, 8.8 g of which was mixed with 6.1 g NK 2014 cyanine dye to give a near-IR absorbing pigment, 1 part of the resulting pigment was mixed with 100 parts ethylcellosolve and applied on a polyester film and dried to give a near-IR absorbing material with light transmittance at 830 nm 13.5% initially and 13.6% after irradiation with light for 300 h.

IT 574744-49-3P

RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)

(pigment; preparation of near IR absorbing pigments with good light resistance for near IR absorbing materials)

RN 574744-49-3 HCAPLUS

CN Quinolinium, 1-ethyl-2-[7-(1-ethyl-2(1H)-quinolinylidene)-1,3,5-heptatrienyl]-, bis[4-[[3,4-di(mercapto-κS)phenyl]sulfonyl]morpholinato(2-)]nickelate(1-) (9CI) (CA INDEX NAME)

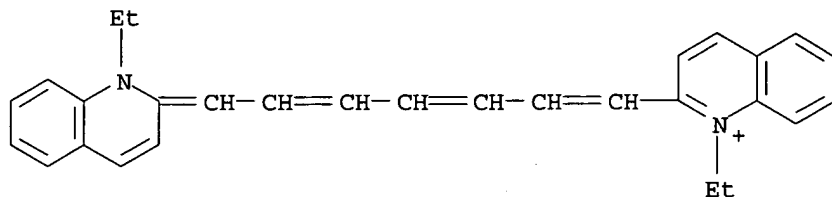
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CRN 366478-31-1

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CCI CCS





RN 775320-92-8 HCAPLUS

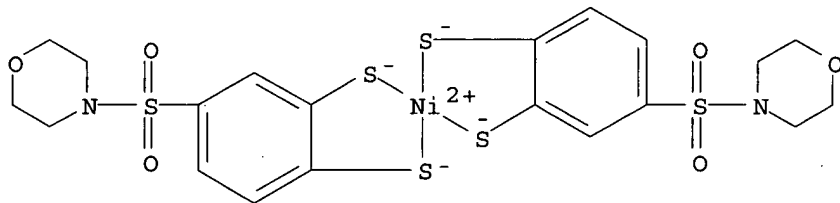
CN Quinolinium, 1-ethyl-2-[7-(1-ethyl-2(1H)-quinolinylydene)-1,3,5-heptatrienyl]-, bis[4-[[3,4-di(mercapto-κS)phenyl]sulfonyl]morpholinato(2-)]nickelate(2-) (2:1) (9CI) (CA INDEX NAME)

CM 1

CRN 775320-61-1

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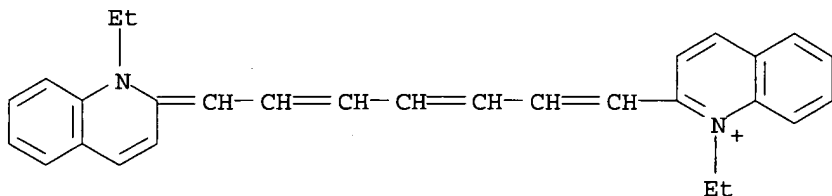
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CM 2

CRN 37069-61-7

CMF C29 H29 N2



L29 ANSWER 2 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2003:607521 HCAPLUS

DOCUMENT NUMBER: 139:165857

TITLE: Near **infrared** absorbing pigments with good light resistance and near **infrared** absorbing materials

INVENTOR(S): Nishiguchi, Hideaki; Suzuki, Michio

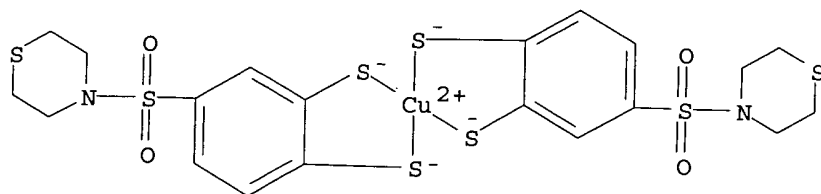
PATENT ASSIGNEE(S): Sumitomo Seika Chemicals Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

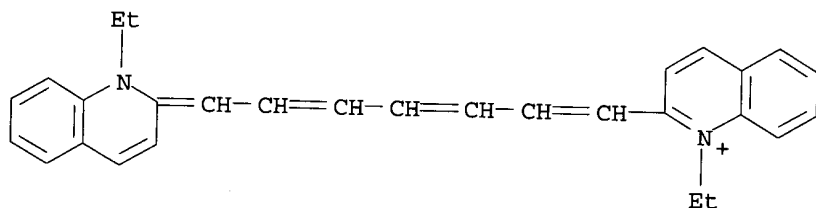
LANGUAGE: Japanese



CM 2

CRN 37069-61-7

CMF C29 H29 N2



RN 775320-90-6 HCAPLUS

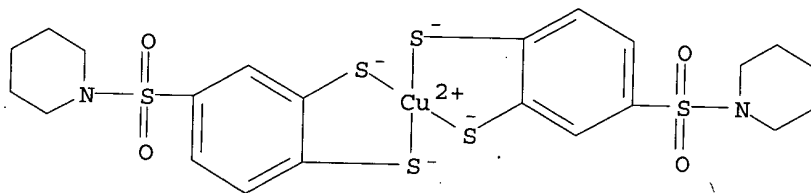
CN Quinolinium, 1-ethyl-2-[7-(1-ethyl-2(1H)-quinolinyldiene)-1,3,5-heptatrienyl]-, bis[1-[[3,4-di(mercapto-κS)phenyl]sulfonyl]piperidinato(2-)]cuprate(2-) (2:1) (9CI) (CA INDEX NAME)

CM 1

CRN 775320-59-7

CMF C22 H26 Cu N2 O4 S6

CCI CCS



CM 2

CRN 37069-61-7

CMF C29 H29 N2

IT 775320-86-0 775320-88-2 775320-90-6

775320-92-8

RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)

(optical absorption pigment for optical absorption material)

RN 775320-86-0 HCAPLUS

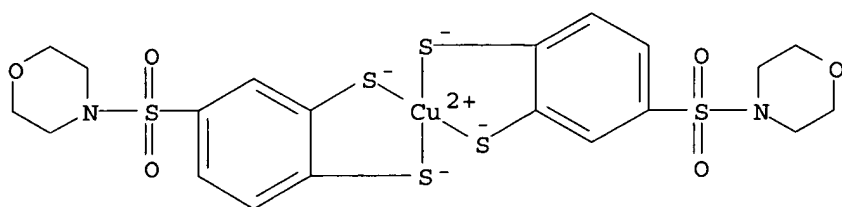
CN Quinolinium, 1-ethyl-2-[7-(1-ethyl-2(1H)-quinolinyldiene)-1,3,5-heptatrienyl]-, bis[4-[[3,4-di(mercapto-κS)phenyl]sulfonyl]morpholinato(2-)]cuprate(2-) (2:1) (9CI) (CA INDEX NAME)

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CRN 775320-55-3

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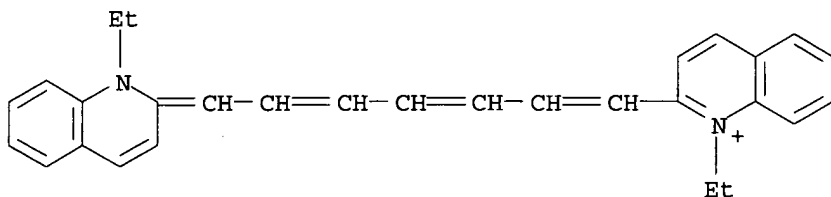
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CM 2

CRN 37069-61-7

CMF C29 H29 N2



RN 775320-88-2 HCAPLUS

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CM 1

CRN 775320-57-5

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CCI CCS

NUMBER OF NODES IS 92

## STEREO ATTRIBUTES: NONE

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 L6 1046 SEA FILE=HCAPLUS ABB=ON PLU=ON L5  
 L15 2248 SEA FILE=HCAPLUS ABB=ON PLU=ON 41-11/CC  
 L16 32 SEA FILE=HCAPLUS ABB=ON PLU=ON L15 AND L6  
 L18 12170 SEA FILE=HCAPLUS ABB=ON PLU=ON FLUORESCENT DYES+PFT,NT,RT/CT  
  
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 L28 11 SEA FILE=HCAPLUS ABB=ON PLU=ON L27 AND ?LASER?  
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L29 ANSWER 1 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:842330 HCAPLUS

DOCUMENT NUMBER: 141:357774

TITLE: Optical absorption pigment for optical absorption material

INVENTOR(S): Nishiguchi, Hideaki; Takeuchi, Takeshi; Fujisawa, Eiji; Suzuki, Michio

PATENT ASSIGNEE(S): Sumitomo Seika Chemicals Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 28 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

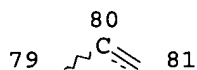
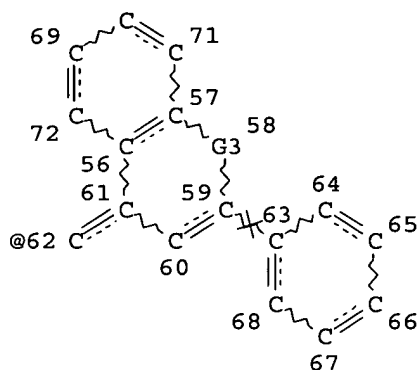
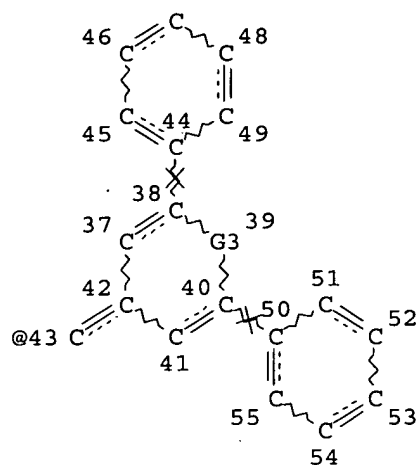
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PATENT INFORMATION:

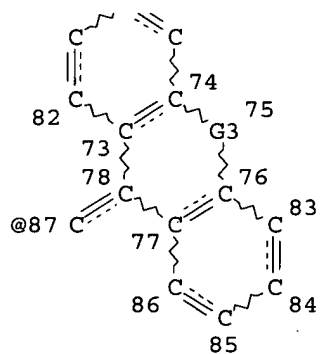
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004285314	A2	20041014	JP 2003-130160	20030508
PRIORITY APPLN. INFO.:			JP 2002-303003	A 20021017
			JP 2003-24346	A 20030131
OTHER SOURCE(S):		MARPAT 141:357774		
GI				

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The invention relates to an optical absorption pigment, suited for use in making an optical absorption materials, such as a plasma display filter, an IR filter, etc., characterized by: the ion pair composed of the substituted benzenethiol transition metal complex anion represented by I [R1 and R2 = C1-6 alkyl, C1-8 alkylamino, etc.; and M = transition metal atom] and the cyanine dye cation represented by II [Q1 and Q2 = 5 and 6 member N-heterocyclic forming atoms; R3 and R4 = C1-8 alkyl; and R5 = CH=CR6-CH, CH=CH-CR6=CH-CH, etc. [R6 = halo, alkyl, and aryl]]; and the diimmonium salt dye represented by III [R7-10 = H, C1-6 alkyl, C1-8 alkylamino and aryl; X- = halide, inorg. and organic ions].



Page 2-A



Page 3-A

REP G1=(0-2) 11-8 12-10

VAR G2=25/36/43/62/87

VAR G3=O/S/SE/88/91

NODE ATTRIBUTES:

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CONNECT IS E1 RC AT 89

CONNECT IS E1 RC AT 90

CONNECT IS E1 RC AT 92

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

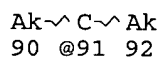
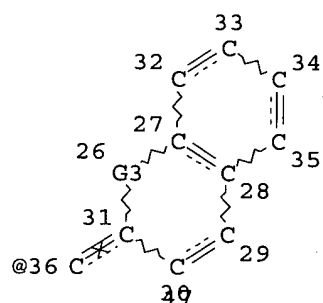
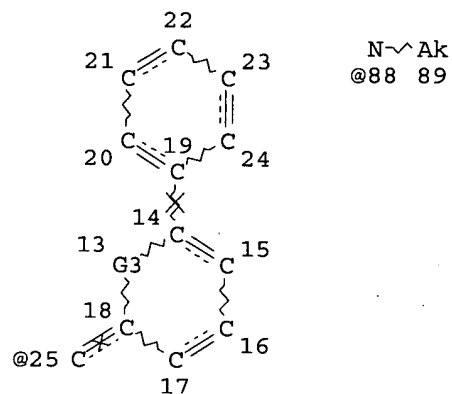
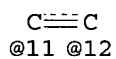
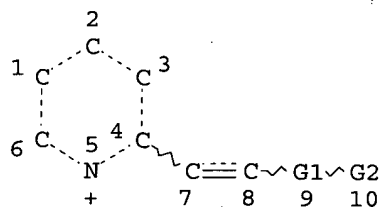
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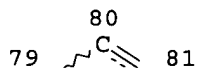
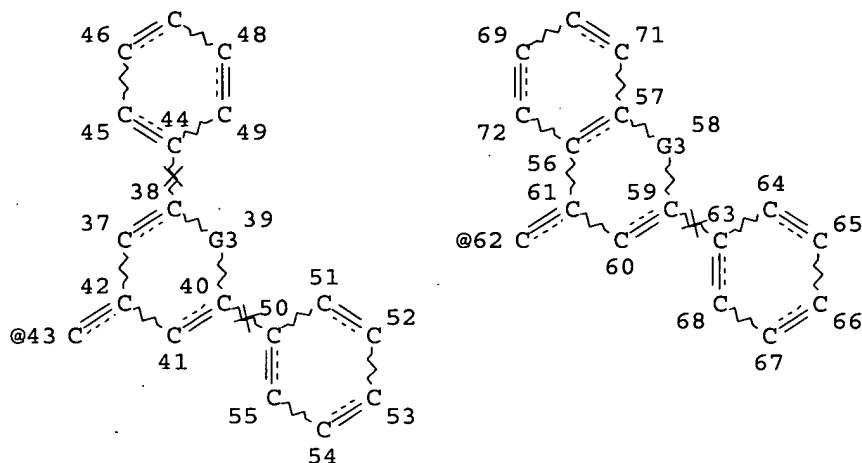
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L4          STR

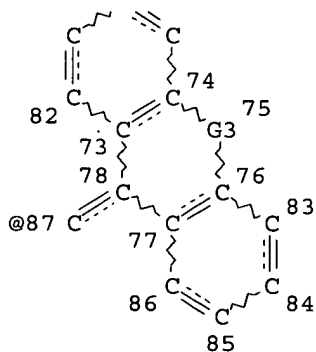
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70



Page 2-A



Page 3-A

REP G1=(0-2) 11-8 12-10

VAR G2=25/36/43/62/87

VAR G3=O/S/SE/88/91

NODE ATTRIBUTES:

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CONNECT IS E1 RC AT 90

CONNECT IS E1 RC AT 92

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

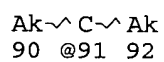
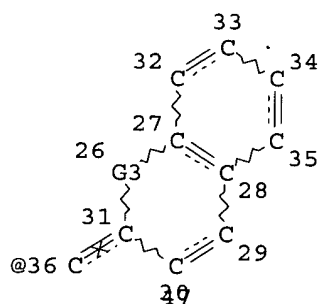
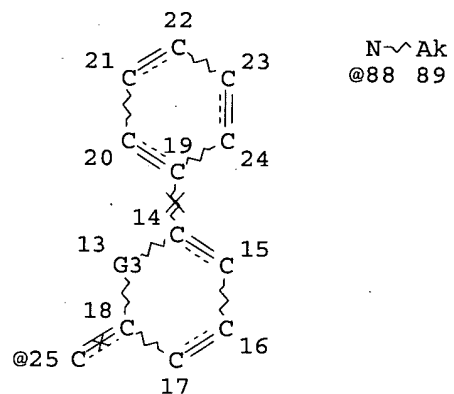
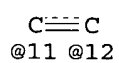
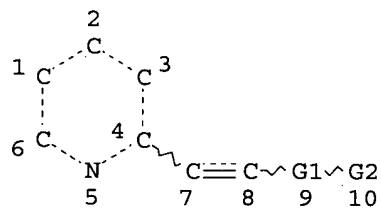
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NUMBER OF NODES IS 92

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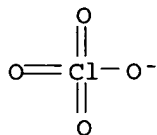
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Page 1-A

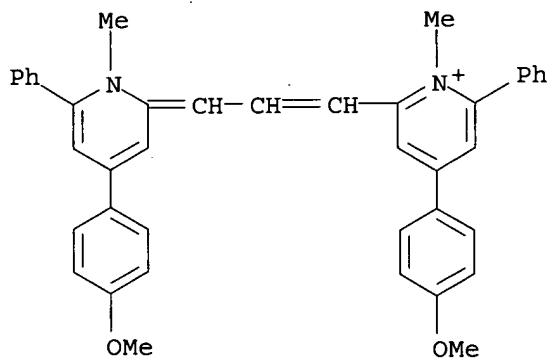




RN 94663-85-1 HCAPLUS  
 CN Pyridinium, 4-(4-methoxyphenyl)-2-[3-[4-(4-methoxyphenyl)-1-methyl-6-phenyl-2(1H)-pyridinyldiene]-1-propenyl]-1-methyl-6-phenyl-, perchlorate (9CI) (CA INDEX NAME)

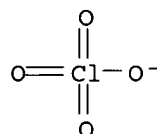
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CM 2

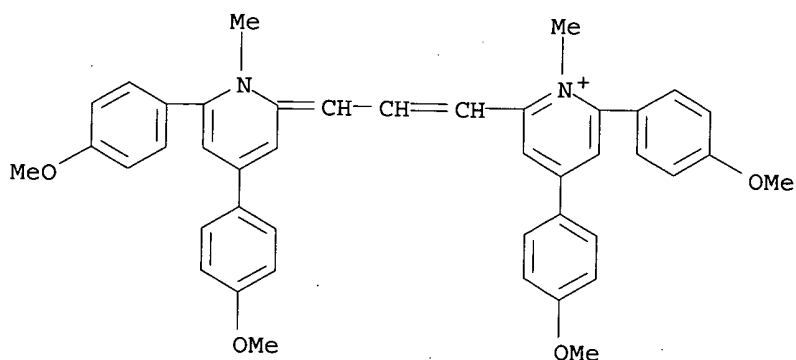
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 CMF Cl O4



RN 94663-87-3 HCAPLUS  
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CM 1

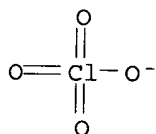
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 CMF C43 H41 N2 O4



CM 2

CRN 14797-73-0

CMF Cl 04



IT 75547-08-9

RL: PRP (Properties)  
(visible spectra of)

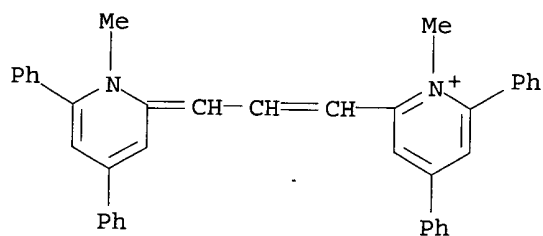
RN 75547-08-9 HCAPLUS

CN Pyridinium, 1-methyl-2-[3-(1-methyl-4,6-diphenyl-2(1H)-pyridinyli-  
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CRN 75547-07-8

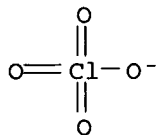
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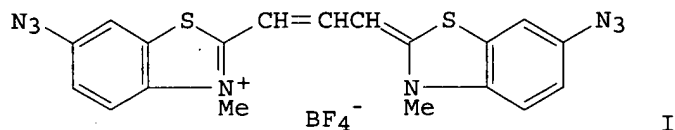
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CRN 14797-73-0

CMF Cl 04



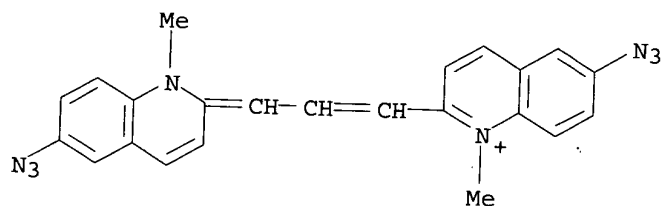
L29 ANSWER 57 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1984:439817 HCAPLUS  
 DOCUMENT NUMBER: 101:39817  
 TITLE: Photochemistry of azide group-containing dyes in solution  
 AUTHOR(S): Pochinok, V. Ya.; Smirnov, V. A.; Brichkin, S. B.; Avramenko, L. F.; Tyltina, L. I.; Grigorenko, T. F.; Ol'shevskaya, I. A.; Skopenko, V. N.  
 CORPORATE SOURCE: Kiev. Gos. Univ., Kiev, USSR  
 SOURCE: Ukrainskii Khimicheskii Zhurnal (Russian Edition) (1984), 50(3), 296-301  
 CODEN: UKZHAU; ISSN: 0041-6045  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 GI



AB Study of the photodecompn. of 21 azide derivs. of triphenylmethane and cyanine dyes by irradiation at the wavelength of their resp. absorption maximum showed that dissociation can be caused by visible light  $\leq 600$  nm, proceeds through the excited singlet state by a mechanism involving predissocn., and occurs with increasing quantum yield as the azide group is more closely conjugated with the absorbing chromophore. The quantum yield for dissociation ranged upward to  $4 \times 10^{-2}$  for I [90967-10-5]. Decreased nonradiative decay of electron energy also increases the quantum yield of dissociation

IT 90967-08-1  
 RL: PROC (Process)  
 (photodissocn. of, quantum yield for)

RN 90967-08-1 HCAPLUS  
 CN Quinolinium, 6-azido-2-[3-(6-azido-1-methyl-2(1H)-quinolinylidene)-1-propenyl]-1-methyl-, iodide (9CI) (CA INDEX NAME)



● I -

L29 ANSWER 58 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1984:129578 HCAPLUS  
 DOCUMENT NUMBER: 100:129578  
 TITLE: Passive mode locking in the near **infrared**  
 AUTHOR(S): Sibbett, W.; Taylor, J. R.  
 CORPORATE SOURCE: Dep. Phys., Imp. Coll., London, SW7 2BZ, UK  
 SOURCE: IEEE Journal of Quantum Electronics (1984), QE-20(2), 108-10  
 CODEN: IEJQA7; ISSN: 0018-9197  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

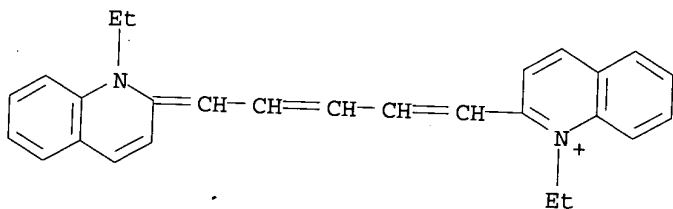
AB Passive mode locking in the previously uncovered 705-798 nm spectral region was achieved with a simple flashlamp-pumped dye **laser** using Rhodamine 700 as the active medium with 1,1'-diethyl-4,4'-carbocyanine iodide and 1,1'-diethyl-2,2'-dicarbocyanine iodide as saturable absorbers. Pulses having duration in the range 4-7 ps with peak powers up to 10 MW were produced. Several other saturable absorbers also operated successfully in this wavelength range.

IT 14187-31-6

RL: PRP (Properties)  
 (as saturable absorber, in passive mode locking of Rhodamine 700 **laser**)

RN 14187-31-6 HCAPLUS

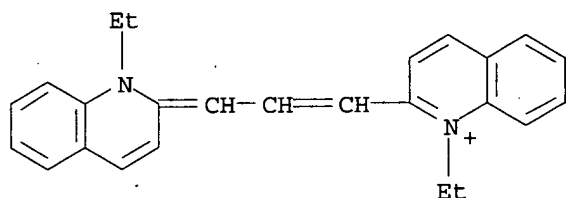
CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME).



● I -

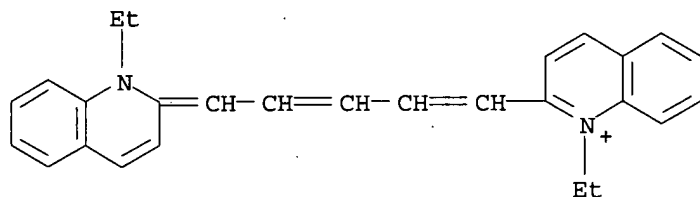
L29 ANSWER 59 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1984:122747 HCAPLUS

DOCUMENT NUMBER: 100:122747  
TITLE: Nitrogen 1s binding energy shifts detected from a homologous series of cyanine dyes  
AUTHOR(S): Gold, L.; Giuliani, J. F.  
CORPORATE SOURCE: Chem. Div., Nav. Res. Lab., Washington, DC, 20375, USA  
SOURCE: Journal of the American Chemical Society (1984), 106(7), 2209-10  
CODEN: JACSAT; ISSN: 0002-7863  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB Study of a series of sym. cyanine dyes by ESCA in conjugation with electronic absorption spectrometry shows that the principal electronic absorption band shifts with conjugation are directly reflected in the delocalization of the nitrogen (1s) core electrons in which the binding energy decreases linearly with increasing conjugation. The decrease in nitrogen (1s) binding energy with increasing dye conjugation reflects a greater delocalization of charge over the entire dye mol., and hence an increased probability for electronic and optical conductivity  
IT 605-91-4 14187-31-6  
RL: PRP (Properties)  
(conjugation in, nitrogen (1s) binding energy in relation to)  
RN 605-91-4 HCAPLUS  
CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

RN 14187-31-6 HCAPLUS  
CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)



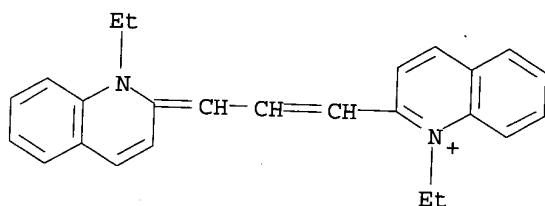
● I<sup>-</sup>

L29 ANSWER 60 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 1982:440301 HCAPLUS  
DOCUMENT NUMBER: 97:40301  
TITLE: Calculation of the electronic level of sensitive dye molecules  
AUTHOR(S): Tang, Yingwu; Wang, Jiazhen; Guo, Jinliang  
CORPORATE SOURCE: Dep. Chem. Chem. Eng., Qinghua Univ., Beijing, Peop. Rep. China  
SOURCE: Qinghua Daxue Xuebao (1981), 21(4), 71-82  
DOCUMENT TYPE: CODEN: CHHPAH; ISSN: 0577-9189  
LANGUAGE: Journal  
Chinese

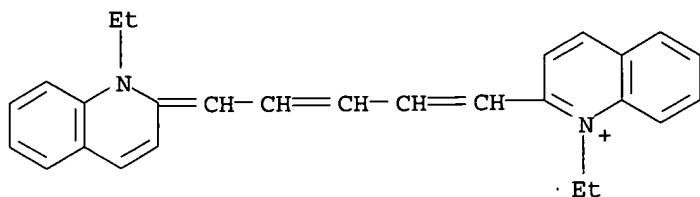
AB The eigenpolynomials of 16 dye mols. including quinocyanine, thiocarbocyanine, oxacarbocyanine, and selenacarbocyanine were derived by MO graph theory. Energies of the mol. electronic levels were obtained by solving these polynomials. The resonance integral  $\beta$  was evaluated by linear regressive anal. Values of excited energies and reduction half-wave potentials of these dyes were paralleled with each other, being in complete agreement with the published exptl. data. All calcns. were performed with a programmable pocket calculator.

IT 605-91-4 14187-31-6 17695-32-8  
RL: USES (Uses)  
(sensitive dyes, electronic levels of, calcn. of, by MO graph theory)

RN 605-91-4 HCAPLUS  
CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinyliidene)-1-propenyl]-, iodide (9CI) (CA INDEX NAME)

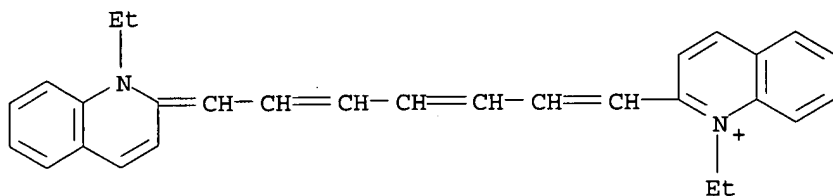


RN 14187-31-6 HCAPLUS  
CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinyliidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

RN 17695-32-8 HCAPLUS  
 CN Quinolinium, 1-ethyl-2-[7-(1-ethyl-2(1H)-quinolinylidene)-1,3,5-heptatrienyl]-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

L29 ANSWER 61 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1982:87011 HCAPLUS  
 DOCUMENT NUMBER: 96:87011  
 TITLE: Pyrylocyanines. Part 13. Symmetric pyrylocyanines on a base of 2,3-polymethylene-4,6-diphenylpyrylium salts  
 AUTHOR(S): Kudinova, M. A.; Derevyanko, N. A.; Dyadyusha, G. G.; Ishchenko, A. A.; Tolmachev, A. I.  
 CORPORATE SOURCE: Inst. Org. Khim., Kiev, 252660, USSR  
 SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (1981), (9), 1195-1201  
 CODEN: KGSSAQ; ISSN: 0453-8234  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 GI For diagram(s), see printed CA Issue.  
 AB Pyrylocyanine dyes I (X = O, S, NMe; m = 2, 3; n = 0-2), prepared from 2,3-polymethylene-4,6-diphenylpyrylium perchlorates or 6,7-dihydro-2,4-diphenyl-5H-1-benzothiopyran-8-carboxaldehyde (II) [80724-56-7] showed more explicit bond structure and bathochromism in their absorption spectra when m = 3 and, especially, 2, owing to steric (e.g., fixation of di-cis-conformations of polymethine chains) and conjugational (e.g., interaction between electrons of saturated groups and unsatd. chromophores) effects, as confirmed by H1 NMR and quantum calcns. (e.g., of absorption maximum using the HMO method). Thus, I (X = O; m = 2; n = 1), obtained in 64% yield by 30 min heating (110°) of 2,4-diphenylcyclopenta[b]pyrylium perchlorate [21016-30-8] and

phenyl[3-(phenylamino)-2-propenylidene]ammonium chloride [28140-60-5] in the presence of NaOAc, AcOH, and Ac<sub>2</sub>O, exhibited  $\lambda_{\text{max}}$  = 855 and 960 nm, average absorption band position M-1 = 894.9 nm, band width  $\sigma$  = 1061 cm<sup>-1</sup>, and coeffs. of asymmetry  $\gamma_1$  = 1.78, of excess  $\gamma_2$  = 5.2, and of fine structure F = 0.131, whereas I (X = O; polymethylene bridge absent; n = 1), synthesized from II, showed  $\lambda_{\text{max}}$  = 820 and 910 nm, M-1 = 839.5 nm,  $\sigma$  = 1137 cm<sup>-1</sup>,  $\gamma_1$  = 1.32,  $\gamma_2$  = 2.9, and F = 0.083.

IT 75547-08-9 75547-10-3

RL: USES (Uses)

(dye, spectral characterization of)

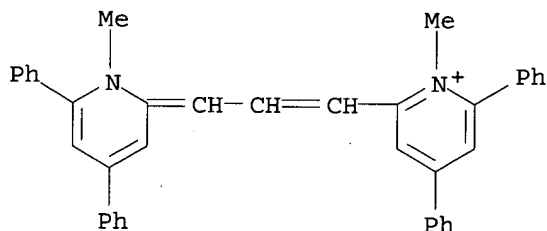
RN 75547-08-9 HCAPLUS

CN Pyridinium, 1-methyl-2-[3-(1-methyl-4,6-diphenyl-2(1H)-pyridinylidene)-1-propenyl]-4,6-diphenyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 75547-07-8

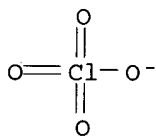
CMF C39 H33 N2



CM 2

CRN 14797-73-0

CMF Cl O4



RN 75547-10-3 HCAPLUS

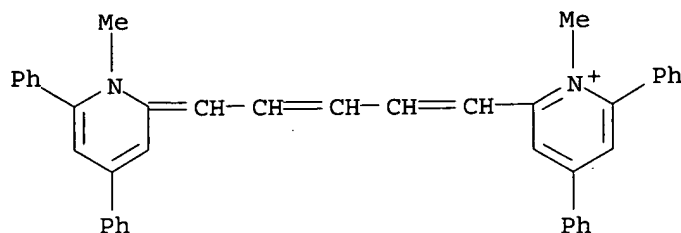
CN Pyridinium, 1-methyl-2-[5-(1-methyl-4,6-diphenyl-2(1H)-pyridinylidene)-1,3-pentadienyl]-4,6-diphenyl-, perchlorate (9CI) (CA INDEX NAME)

CM 1

CRN 75547-09-0

CMF C41 H35 N2

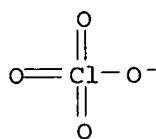




CM 2

CRN 14797-73-0

CMF Cl O4



L29 ANSWER 62 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1982:70416 HCAPLUS

DOCUMENT NUMBER: 96:70416

TITLE: Chemistry of enolic ethers or esters. LII. Reaction of Vilsmeier complex vinyl analogs with heterocyclic compounds as a new method for synthesizing cyanine dyes

AUTHOR(S): Makin, S. M.; Pomogaev, A. I.

CORPORATE SOURCE: Inst. Tonkoi Khim. Tekhnol., Moscow, USSR

SOURCE: Zhurnal Organicheskoi Khimii (1981), 17(11), 2263-8

CODEN: ZORKAE; ISSN: 0514-7492

DOCUMENT TYPE: Journal

LANGUAGE: Russian

GI For diagram(s), see printed CA Issue.

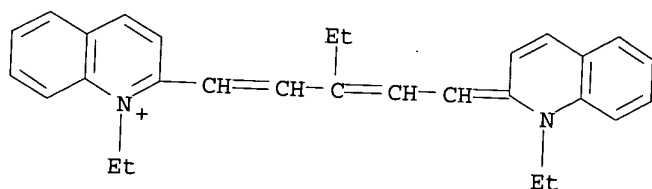
AB The reaction of acetals  $RCH_2CH(OEt)_2$  (I, more reactive than the corresponding aldehydes or enol ethers) with the Vilsmeier complex  $Me_2N^+:CHCl PO_2Cl_2^-$  (II) [21382-90-1] gave  $(Me_2N:CHCR:CHOEt)+PO_2Cl_2^-$ , condensation of which with 3-ethyl-2-methylbenzothiazolium iodide [3119-93-5] at 80-120° in  $Ac_2O$  in the presence of  $Et_3N$  resulted in the meso-substituted dicarbocyanine dyes III ( $R = H, Me, Et, Me_2CH, F, Cl, Br, Ph, OEt, CCl_3; X = ClO_4, I$ ) obtained in 26-84% yields, with  $\lambda_{max} \approx 650$  nm. Similar dyes were also prepared in acceptable yields from I, II, and 1-ethyl-4-methylquinolinium iodide [605-59-4], 1-ethyl-2-methylquinolinium iodide [606-55-3], or 3-ethyl-1,1,2-trimethylbenz[e]indolium iodide [80566-25-2], and the tricarbocyanine dyes (e.g., IV [65303-24-4]) were synthesized using V ( $m = 0, n = 1$  or 2;  $m = n = 1, Z = CH_2$  or  $Me_2N+I^-$ ) and II.

IT 67233-71-0P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(dye, preparation and properties of)

RN 67233-71-0 HCAPLUS

CN Quinolinium, 1-ethyl-2-[3-ethyl-5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)

● I<sup>-</sup>

L29 ANSWER 63 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1982:21271 HCAPLUS  
 DOCUMENT NUMBER: 96:21271  
 TITLE: Role of nitroxyl radical in the quenching of triplet states of cyanine dyes  
 AUTHOR(S): Borisevich, Yu. E.; Kuz'min, V. A.; Renge, I. V.; Darmanyany, A. P.  
 CORPORATE SOURCE: Inst. Khim. Fiz., Moscow, USSR  
 SOURCE: Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya (1981), (9), 2014-19  
 CODEN: IASKA6; ISSN: 0002-3353  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian

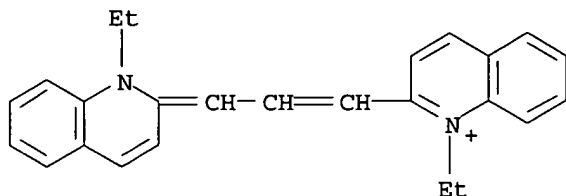
AB The quenching of the triplet state of cyanine dyes (A), having different oxidation (E, 0.25-1.0 V) and reduction (E') potentials, with stable nitroxyl radicals (B) in solution in the homologous series of alcs. with polarity (ε) ranging from 9.7 to 32.6 was studied by flash photolysis. Quenching, characterized by the rate constant k, proceeded via formation of charge-transfer complexes with B as donor and A triplet as acceptor of electrons for A with high E (e.g., 1.0 V), via acceleration of the intersystem crossing of A triplets to the ground state under perturbations induced by B for A with low E (e.g., 0.25 V), and via the 1st or 2nd mechanism in the more or less polar alcs., resp., for A with medium E (e.g., 0.75 V). The mechanisms proposed are based on the facts that log k linearly increased with increasing E during quenching with electron-donor p-anisidine [104-94-9] or with B (for E > 0.45 V) and decreased with increasing E' during quenching with electron-acceptor p-nitrotoluene [99-99-0], but did not correlate with E' during quenching with B, and remained practically unchanged or increased with increasing ε for A with low or high E, resp.

IT 20187-38-6

RL: PRP (Properties)  
 (triplet state of, quenching of, by nitroxyl radicals, kinetics and mechanism of)

RN 20187-38-6 HCAPLUS

CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-  
 (9CI) (CA INDEX NAME)



L29 ANSWER 64 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1979:159865 HCAPLUS  
 DOCUMENT NUMBER: 90:159865  
 TITLE: A high-output-power near-infrared tunable dye laser  
 AUTHOR(S): Byron, K. C.; Pert, G. J.  
 CORPORATE SOURCE: Dep. Appl. Phys., Univ. Hull, Hull, UK  
 SOURCE: Journal of Physics E: Scientific Instruments (1979), 12(4), 289-93  
 CODEN: JPSIAE; ISSN: 0022-3735  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

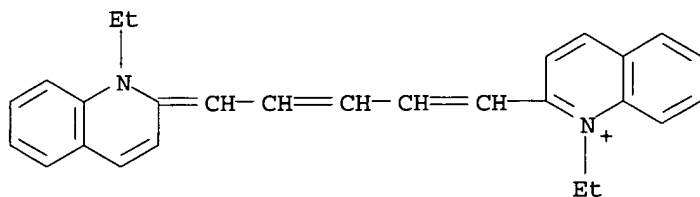
AB A ruby-laser-pumped dye laser having a linewidth of 1.8 nm was developed as a source of tunable high-output-power radiation covering the wavelength range 720-900 nm. With Brewster-angled prisms employed as a low-insertion-loss tuning element, output powers of between 5 and 24 MW were obtained for an input pumping power of up to 65 MW in a number of cyanine dyes. Conversion efficiencies of up to 40% were obtained with these dyes dissolved in ethylene glycol, which in general gave an improved performance compared with Me<sub>2</sub>CO solns.

IT 14187-31-6 17695-32-8

RL: DEV (Device component use); USES (Uses)  
 (laser, IR tunable)

RN 14187-31-6 HCAPLUS

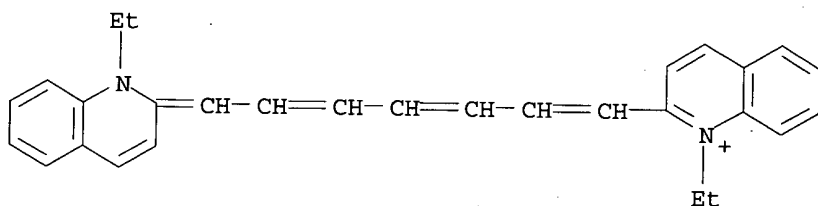
CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

RN 17695-32-8 HCAPLUS

CN Quinolinium, 1-ethyl-2-[7-(1-ethyl-2(1H)-quinolinylylidene)-1,3,5-heptatrienyl]-, iodide (9CI) (CA INDEX NAME)

● I<sup>-</sup>

L29 ANSWER 65 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1979:129827 HCAPLUS

DOCUMENT NUMBER: 90:129827

TITLE: Optical probe studies of relaxation processes in viscous liquids

AUTHOR(S): Barkatt, A.; Angell, C. A.

CORPORATE SOURCE: Dep. Chem., Purdue Univ., West Lafayette, IN, USA

SOURCE: Journal of Chemical Physics (1979), 70(2), 901-11  
CODEN: JCPSA6; ISSN: 0021-9606

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The question of relaxation time distributions in viscous liqs. was examined by observing time-dependent behavior of optically active elements of the liquid structure, both intrinsic and otherwise, in response to perturbations from equilibrium states. As a suitable medium for this study, the polyalc. sorbitol C<sub>6</sub>H<sub>8</sub>(OH)<sub>6</sub> was adopted. Equilibrium distributions of intact and broken H bonds in the pure sorbitol were determined using near IR spectra, and the loss of, and reestablishment of, this equilibrium, during down and up temperature ramping processes, was monitored and analyzed. Anal. shows that

the kinetics of the bond-breaking process are well accounted for by a relaxation function near equilibrium, of the form  $\phi_e(t) = e^{-[t/\tau_0]\beta}$ , with  $\beta = 0.55 \pm 0.03$ . As extrinsic probes, 2 carbocyanine dyestuffs were introduced in low concns. into the sorbitol, and the equilibrium distribution of monomer and dimer species was determined

as a function of temperature The loss and recovery of the equilibrium also was monitored

during down and up temperature ramping expts. These equilibrium are lost and recovered at temps. far above that at which solvent structure equilibrium is established on the same time scale, showing that equilibration times for the monomer-dimer equilibrium are many orders of magnitude longer than for solvent structure.

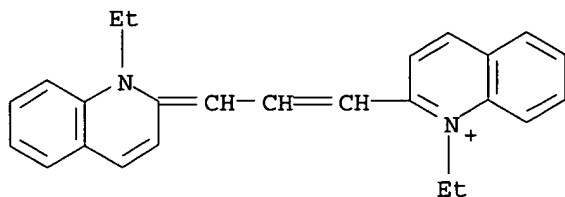
IT 605-91-4 2768-90-3

RL: PRP (Properties)

(optical probe study of relaxation processes in viscous media using)

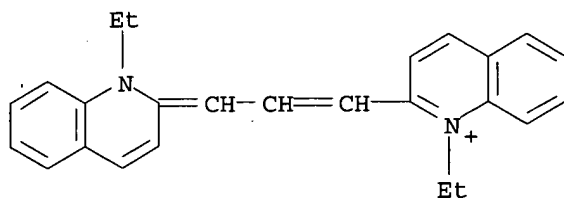
RN 605-91-4 HCAPLUS

CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

RN 2768-90-3 HCAPLUS  
 CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-, chloride (9CI) (CA INDEX NAME)



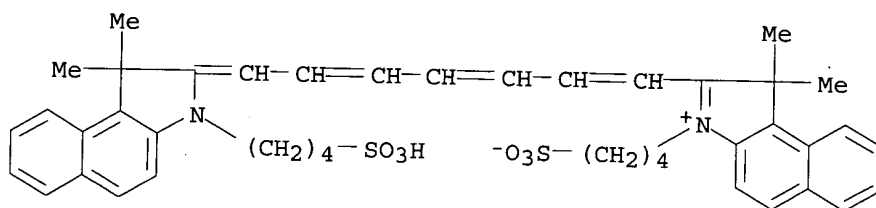
● Cl<sup>-</sup>

L29 ANSWER 66 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1976:142869 HCAPLUS  
 DOCUMENT NUMBER: 84:142869  
 TITLE: Lasing efficiency and photochemical stability of IR laser dyes in the 710-1080-nm spectral region  
 AUTHOR(S): Oettinger, Peter E.; Dewey, C. Forbes, Jr.  
 CORPORATE SOURCE: Thermo Electron Corp., Waltham, MA, USA  
 SOURCE: IEEE Journal of Quantum Electronics (1976), QE12(2, Pt. 2), 95-101  
 CODEN: IEJQA7; ISSN: 0018-9197  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Lasing efficiencies and photochem. stabilities of laser dyes useful in the 710-1080 nm spectral region were investigated by using a Q-switched ruby laser pumping source. The measured bleaching rates, defined as the probability of irreversible decomposition of a dye mol. per absorbed photon, varied from  $\leq 1 + 10^{-5}$  to  $3 + 10^{-4}$  for the different dye-solvent combinations investigated. Broad-band lasing efficiencies (the ratios of dye laser output to ruby radiation input) ranged from 4-43%. Shifts of wavelength tuning range with variations in solvent, dye concentration, and dye laser cavity geometry are reported.  
 IT 3599-32-4 14187-31-6  
 RL: PRP (Properties)

(lasing efficiency and photochem. stability of)

RN 3599-32-4 HCAPLUS

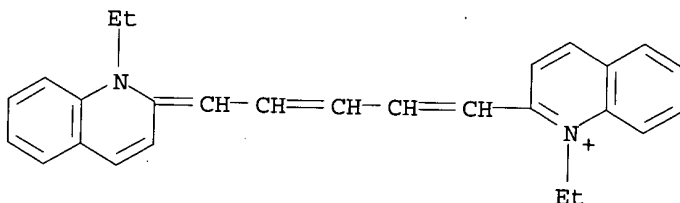
CN 1H-Benz[e]indolium, 2-[7-[1,3-dihydro-1,1-dimethyl-3-(4-sulfobutyl)-2H-benz[e]indol-2-ylidene]-1,3,5-heptatrienyl]-1,1-dimethyl-3-(4-sulfobutyl)-, inner salt, sodium salt (9CI) (CA INDEX NAME)



● Na

RN 14187-31-6 HCAPLUS

CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinyliidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

L29 ANSWER 67 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1975:505958 HCAPLUS

DOCUMENT NUMBER: 83:105958

TITLE: Dye **laser** with smooth spectral tuning in the 360-1000 nm range

AUTHOR(S): Loiko, M. M.; Mostovnikov, V. A.; Rubinov, A. N.; Motkin, V. S.

CORPORATE SOURCE: USSR

SOURCE: Kvantovaya Elektron. Lazernaya Spektrosk. (1974), 30-40, 491. Editor(s): Samson, A. M. "Nauka i Tekhnika": Minsk, USSR.

CODEN: 30GYAB

DOCUMENT TYPE: Conference

LANGUAGE: Russian

AB The **laser** instrument Raduga 3M was developed. It gives a rather intense **laser** beam of arbitrary frequency in the range 360-1000 nm with smooth tunability. The exciting light was a ruby **laser** with the basic frequency of 694 nm and a 1st harmonic of 347 nm. The

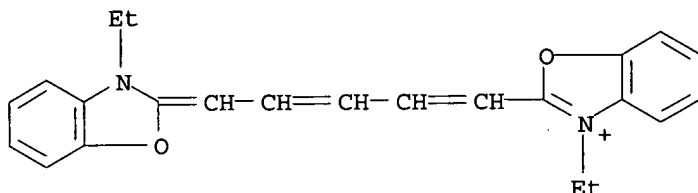
instrument consists of a pumping system and the organic dye **laser**.  
The main absorption bands of 20 dyes are shown graphically. Forty other  
dyes suitable for the use in this instrument and absorbing in the range of  
the ruby **laser** radiation are given.

IT 14806-50-9 17695-32-8

RL: DEV (Device component use); USES (Uses)  
(**lasers** containing, **ir-uv** tunable)

RN 14806-50-9 HCAPLUS

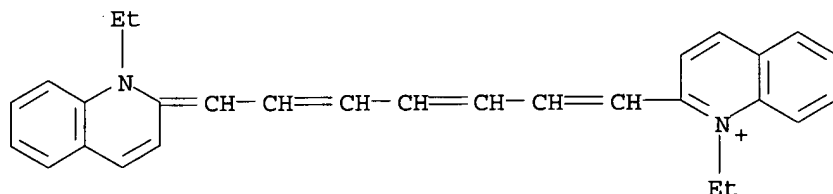
CN Benzoxazolium, 3-ethyl-2-[5-(3-ethyl-2(3H)-benzoxazolyli-  
dene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

RN 17695-32-8 HCAPLUS

CN Quinolinium, 1-ethyl-2-[7-(1-ethyl-2(1H)-quinolinyli-  
dene)-1,3,5-heptatrienyl]-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

RL: PRP (Properties)  
(**lasers** from, **ir-uv** tunable)

L29 ANSWER 68 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1975:418619 HCAPLUS

DOCUMENT NUMBER: 83:18619

TITLE: Polymethine **ir laser** dyes for  
passive mode-locking of ruby **lasers**

AUTHOR(S): Lin, Chinlon

CORPORATE SOURCE: Bell Teleph. Lab., Holmdel, NJ, USA

SOURCE: Optics Communications (1975), 13(2), 106-8

CODEN: OPCOB8; ISSN: 0030-4018

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A Q-switched .apprx.60-nsec pulse was obtained from MeOH or Me2CO alone. Dyes with which a 100% modulated, mode-locked pulse train is obtained include: 1,1'-diethyl-2,2'-dicarbocyanine iodide (DDI), 1,1'-diethyl-4,4'-carbocyanine iodide (cryptocyanine), 1,1'-diethyl-11-bromo-2,2'-quinodibocarbocyanine iodide, 1,3,3',1',3',3'-hexamethyl-2,2'-indotricarbocyanine iodide, 3,3'-diethyl-10-chloro-2,2'-(6,7,6',7'-dibenzo)thiadibocarbocyanine iodide, 3,3'-diethyl-2,2'-thiatricarbocyanine iodide (DTTC iodide). Dyes with which a Q-switched (30-60 nsec) pulse with irregular modulation is obtained include: 3,3'-diethyl-2,2'-thiadibocarbocyanine iodide, 3,3'-diethyl-2,2'-(5,6,5',6'-tetramethoxy)thiatricarbocyanine iodide, 3,3'-diethyl-2,2'-oxatricarbocyanine iodide, 3,3'-diethyl-2,2'-(5,5'-dimethyl)thiazolinotricarbocyanine iodide. With DDI pulses as short as 12 psec are obtained. The other mode-locking dyes generate pulses of 40-100 psec, owing to their longer recovery time for ground-state absorption.

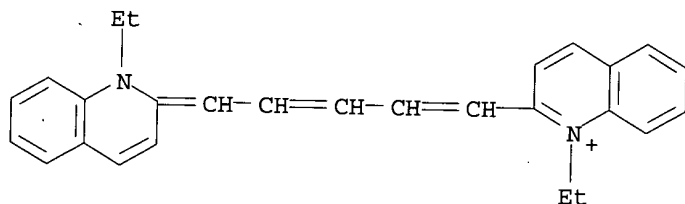
IT 14187-31-6 19764-91-1

RL: PRP (Properties)

(ruby laser mode locking with)

RN 14187-31-6 HCAPLUS

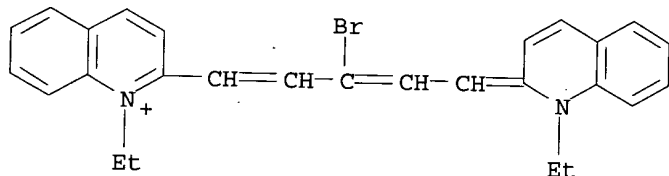
CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

RN 19764-91-1 HCAPLUS

CN Quinolinium, 2-[3-bromo-5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-1-ethyl-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

L29 ANSWER 69 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 1975:118142 HCAPLUS  
 DOCUMENT NUMBER: 82:118142



TITLE: Photosensitized generation of single molecular oxygen with near-infrared radiation

AUTHOR(S): Nathan, Richard A.; Adelman, Albert H.

CORPORATE SOURCE: Battelle Mem. Inst., Columbus, OH, USA

SOURCE: Journal of the Chemical Society, Chemical Communications (1974), (16), 674-5  
CODEN: JCCCAT; ISSN: 0022-4936

DOCUMENT TYPE: Journal

LANGUAGE: English

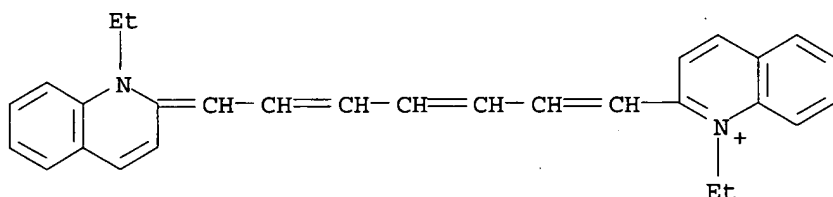
AB Singlet O was generated by near IR irradiation in the presence of 1,1'-diethyl-2,2'-tricarboyanine iodide, xenocyanine, and 3,3'-diethyl-9,11,15,17-dineopentylthiapentacarboyanine iodide as sensitizers, and trapped by 9,10-dimethylanthracene.

IT 17695-32-8

RL: RCT (Reactant); RACT (Reactant or reagent)  
(photosensitizer, in singlet oxygen generation in solution by near IR irradiation)

RN 17695-32-8 HCAPLUS

CN Quinolinium, 1-ethyl-2-[7-(1-ethyl-2(1H)-quinolinylydene)-1,3,5-heptatrienyl]-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

L29 ANSWER 70 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1972:106427 HCAPLUS

DOCUMENT NUMBER: 76:106427

TITLE: Direct-positive photographic silver halide emulsions containing cyanine dye sensitizers

INVENTOR(S): Shiba, Keisuke; Hinata, Masanao; Ohi, Reiichi; Kondo, Tokiharu; Sato, Akira; Yamasue, Koutaro

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd.

SOURCE: Ger. Offen., 49 pp.  
CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2127346	A	19711209	DE 1971-2127346	19710602
DE 2127346	B2	19731031		
DE 2127346	C3	19740530		
JP 48042494	B4	19731213	JP 1970-47380	19700602
FR 2097822	A5	19720303	FR 1971-19938	19710602

CA 975606  
US 3887380  
PRIORITY APPLN. INFO.:

A1	19751007	CA 1971-114642	19710602
A	19750603	US 1973-390264	19730821
		JP 1970-47380	A 19700602
		BE 1971-104148	A 19710602
		CA 1971-114642	A 19710602
		DE 1971-2127346	A 19710602
		FR 1971-19938	A 19710602
		JP 1971-18670	A 19710602
		US 1971-149272	A2 19710602

GI For diagram(s), see printed CA Issue.

AB The spectral sensitivity of direct-pos. black and white or color photog. emulsions containing cyanine dye sensitizers such as I is increased by the addition of sulfonates containing diazine or triazine rings, such as II. I is used at 1-200 mg and II at 5-200 mg per kg of Ag halide emulsion. The weight ratio of II:I is 1:5 to 1:50. Both I and II are added to the emulsions as solns., e.g. in MeOH, EtOH, or H<sub>2</sub>O. Although emulsifying and phys. ripening of the Ag halide emulsion may take place conventionally, the use of an Ir or Rh salt is preferred. Thus, a Ag(Cl,Br,I) emulsion containing 19.7 I and 400 mg II/kg was coated on a cellulose acetate support and exposed through a step wedge using a sensitometer, and the yellow relative sensitivity determined as 155, Dmax. 2.0, and Dmin. 0.26 vs. 100, 2.1, and 0.74, resp., for a II-free control.

IT 14124-47-1 14806-50-9

RL: USES (Uses)

(photog. supersensitizers from sulfonates containing triazines and)

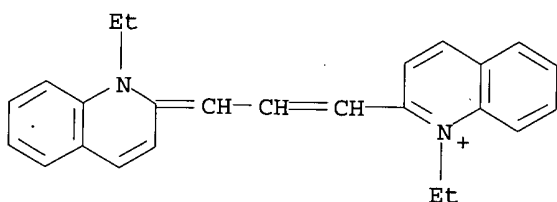
RN 14124-47-1 HCAPLUS

CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-, salt with 4-methylbenzenesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 20187-38-6

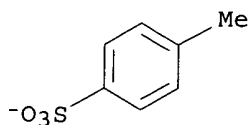
CMF C25 H25 N2



CM 2

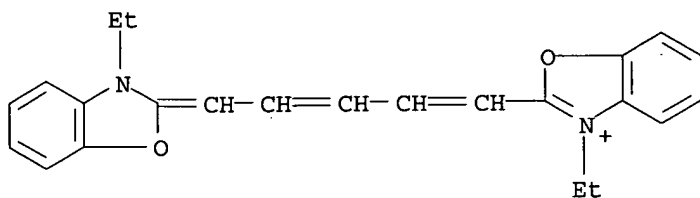
CRN 16722-51-3

CMF C7 H7 O3 S



RN 14806-50-9 HCAPLUS

CN Benzoxazolium, 3-ethyl-2-[5-(3-ethyl-2(3H)-benzoxazolylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

L29 ANSWER 71 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1968:3889 HCAPLUS

DOCUMENT NUMBER: 68:3889

TITLE: Synthesis with substituted malonaldehydes. III. Trinuclear pentamethinecyanine dyes

AUTHOR(S): Reichardt, Christian

CORPORATE SOURCE: Univ. Marburg, Marburg, Fed. Rep. Ger.

SOURCE: Tetrahedron Letters (1967), (44), 4327-32

CODEN: TELEAY; ISSN: 0040-4039

DOCUMENT TYPE: Journal

LANGUAGE: German

GI For diagram(s), see printed CA Issue.

AB I (Z = CH:CH, S, CMe<sub>2</sub>), prepared in 50-75% yield by treating II with HC(CHO)<sub>3</sub> in the ratio 3:1 in Ac<sub>2</sub>O-NaOAc for 2 hrs. at 100°, identified by their ir, uv and N.M.R. spectra. Their structure as "vinyllogous guanidinium salts" is discussed. 22 references.

IT 16449-73-3P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

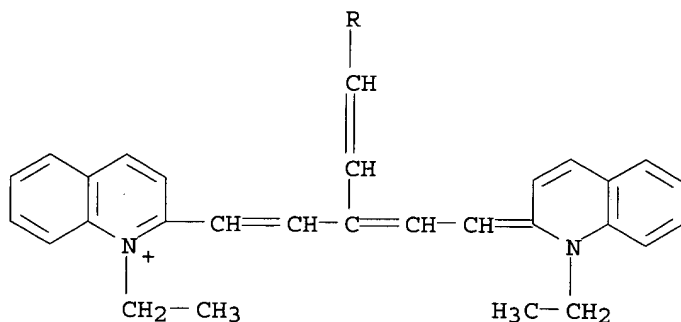
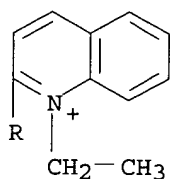
RN 16449-73-3 HCAPLUS

CN Quinolinium, 2,2'-[3-[(1-ethyl-2(1H)-quinolinylidene)ethylidene]-1,4-pentadiene-1,5-diyl]bis[1-ethyl-, bis[tetrafluoroborate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 47845-01-2

CMF C40 H39 N3

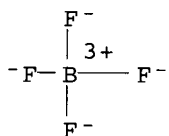


CM 2

CRN 14874-70-5

CMF B F4

CCI CCS



L29 ANSWER 72 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1967:120295 HCAPLUS

DOCUMENT NUMBER: 66:120295

TITLE: Spectral sensitization. V. The visible and **infrared** spectral of some very pure 2-bis-benzoxazolyl, 2-bis-indoliny, and 2-bis-quinolyl cyanine iodides

AUTHOR(S): Leifer, Asa; Bonis, David; Boedner, Marie; Dougherty, P.; Fusco, A. J.; Koral, Marvin; LuValle, James E.

CORPORATE SOURCE: Space and Defense Systems, Syosset, NY, USA

SOURCE: Applied Spectroscopy (1967), 21(2), 71-80

CODEN: APSPA4; ISSN: 0003-7028

DOCUMENT TYPE: Journal

LANGUAGE: English

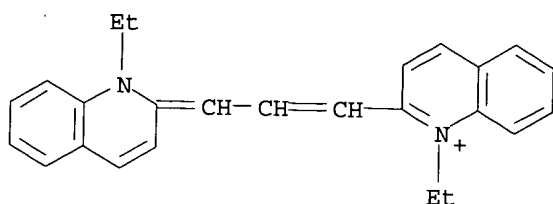
AB cf. CA 65, 17907e. A detailed study of the visible spectra in solution and the **ir** spectra in the solid state has been made for the following vinylogous series of cyanine dyes: [2-bis(3-ethylbenzoxazolyl)]cyanine iodides, [2-bis(1-ethyl-3,3-dimethylindoliny)]cyanine iodides, and [2-bis(1-ethylquinolyl)]cyanine iodides. Each dye, to be acceptable for study, had to be

chromatographically pure, give a correct microchem. elemental analysis, and be free of E.S.R. (free-radical) signals. The characteristic red shift of the principal absorption maximum was observed for these dyes in the visible range as the number of methine linkages increased. A careful comparison of the visible spectral data of the [2-bis(3-ethylbenzoxazolyl)]cyanine iodides with those of the corresponding [2-bis(3-ethylbenzothiazolyl)] and [2-bis(3-ethylbenzoselenazolyl)] cyanine iodides, [Leifer et al., Appl. Spectry. 20, 289(1966)] indicates that the electronegativity of the atom S, Se, or O in the heterocyclic rings probably affects the wavelength of the principal absorption maximum. As the electronegativity of the Group VIA atom increases, the principal absorption maximum shifts slightly toward the blue. Assignments of vibrational modes to sep. absorption regions have been made for this vinylogous series of dyes. Each vinylog has a characteristic pattern of resonant-conjugated stretching modes in the region 1600-1400 cm.<sup>-1</sup>. Some of these modes exhibit a low-frequency shift as the resonant-conjugated chain increases. Comparison of the benzoxazolyl modes with those of the corresponding benzothiazolyl and benzoselenazolyl modes indicates that they are probably a function of the electronegativity of S, Se, or O in the heterocyclic rings. As the electronegativity of the Group VIA atom increases, the resonant-conjugated stretching modes shift to higher frequencies. There are also characteristic bands in the 1600-1400 cm.<sup>-1</sup> region which are present in all the vinylogs of each series of these dyes. These bands have been assigned to the stretching modes of the fused phenyl rings present in these dyes. It appears that the fused phenyl stretching modes are a function of the groupings CMe<sub>2</sub>, O, S, Se present in the indolinyl, benzoxazolyl, benzothiazolyl, and benzoselenazolyl heterocyclic rings, resp. The S and Se atoms affect these modes the least, while the O atom affects these modes the most. Assignments have been made for the aromatic CH out-of-plane bending modes in the region 800-700 cm.<sup>-1</sup> for these vinylogous series of cyanine dyes. In the spectra of the 2-bis(indolinyl) and 2-bis(quinolyl)cyanine iodides, there is a band appearing in the region 1000-900 cm.<sup>-1</sup> which changes systematically with an increase in the number of hydrogens on the bridge. This band has been assigned to the out-of-plane bending vibrations of the hydrogens in a trans configuration on the bridge. No evidence of a cis isomer was observed in the spectra.

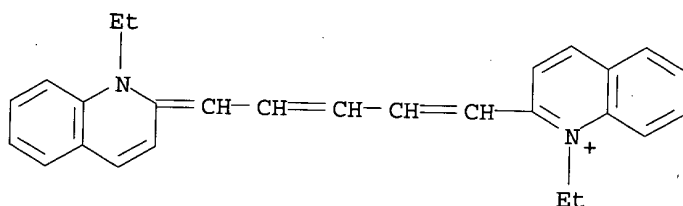
IT 605-91-4, Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolylidene)propenyl]-, iodide 14187-31-6 14806-50-9  
15185-48-5, Trimethinecyanine iodide, [2-bis(1-ethylquinolyl)]-  
15486-07-4 19764-91-1

RL: PRP (Properties)  
(spectrum (ir and visible) of)

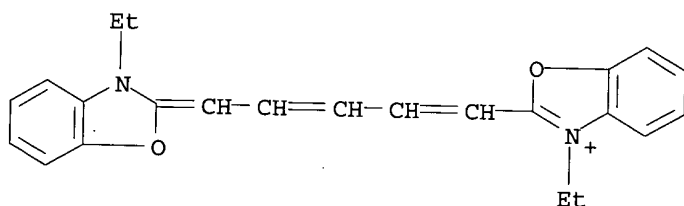
RN 605-91-4 HCAPLUS  
CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolylidene)-1-propenyl]-, iodide (9CI) (CA INDEX NAME)

● I<sup>-</sup>

RN 14187-31-6 HCAPLUS  
 CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)

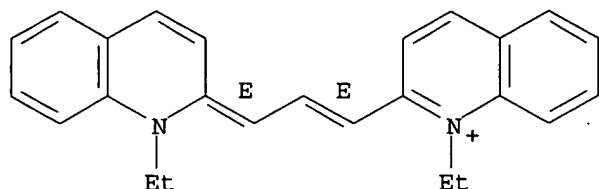
● I<sup>-</sup>

RN 14806-50-9 HCAPLUS  
 CN Benzoxazolium, 3-ethyl-2-[5-(3-ethyl-2(3H)-benzoxazolylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)

● I<sup>-</sup>

RN 15185-48-5 HCAPLUS  
 CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolylidene)propenyl]-, iodide, (E,E)- (8CI) (CA INDEX NAME)

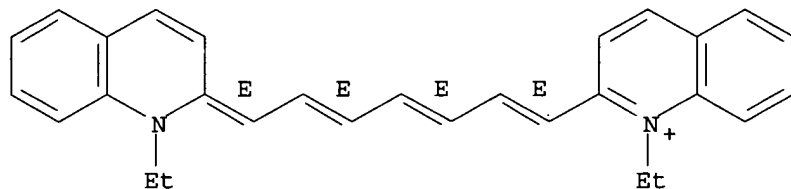
Double bond geometry as shown.



RN 15486-07-4 HCAPLUS

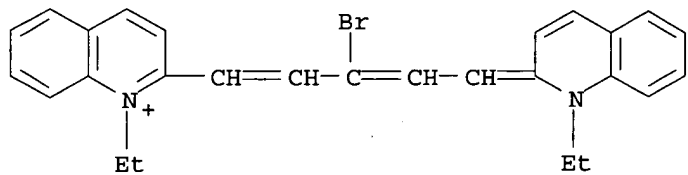
CN Quinolinium, 1-ethyl-2-[7-(1-ethyl-2(1H)-quinolinylidene)-1,3,5-heptatrienyl]-, iodide, (all-E)- (9CI) (CA INDEX NAME)

Double bond geometry as shown.



RN 19764-91-1 HCAPLUS

CN Quinolinium, 2-[3-bromo-5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-1-ethyl-, iodide (9CI) (CA INDEX NAME)



L29 ANSWER 73 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1967:15255 HCAPLUS

DOCUMENT NUMBER: 66:15255

TITLE: Stimulated emission from polymethine dyes

AUTHOR(S): Spaeth, M. L.; Bortfeld, D. P.

CORPORATE SOURCE: Hughes Aircraft Co., Culver City, CA, USA

SOURCE: Applied Physics Letters (1966), 9(5), 179-81

CODEN: APPLAB; ISSN: 0003-6951

DOCUMENT TYPE: Journal  
LANGUAGE: English

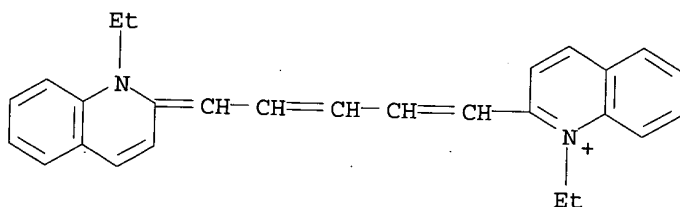
AB Stimulated emission is reported for 2 polymethine dyes, 1,1'-diethyl-2,2'-dicarbocyanine iodide (DDI) and 1,1'-diethyl-4,4'-carbocyanine iodide (cryptocyanine), dissolved in glycerol when pumped by a Q-switched ruby laser. The ratio of fluorescent efficiency  $\epsilon$  measured in glycerol to that found in iso-PrOH is  $22 \pm 3$  for DDI and  $12 \pm 3$  for cryptocyanine. The 0-0 vibrational peak is obtained at 750-790 m $\mu$ , depending on cell length. The 0-1 vibrational transition is also found. The Frank-Condon shift between the fluorescence and absorption peaks in the polymethine dyes is of the order of 300-400 Å. The absorption cross sections at 6943 Å. for these dyes in glycerol are  $4 + 10^{-16}$  cm.<sup>2</sup> for DDI and  $5 + 10^{-16}$  cm.<sup>2</sup> for cryptocyanine. The peak of the emission in DDI shifts to shorter wavelengths with decreasing cell length, and this is due to the effects of self-absorption, which becomes less pronounced in the shorter cells. A slight tendency (in both dyes) for the peak to shift to shorter wavelengths with increasing cavity length is observed. A pronounced and repeatable threshold dependence on the ruby input power, the threshold level being between 20 and 40 Mw. for the different configurations studied, and strong dependence of both threshold and output energy on the cavity length are confirmed.

IT 14187-31-6

RL: PRP (Properties)  
(laser emission from)

RN 14187-31-6 HCAPLUS

CN Quinolinium, 1-ethyl-2-[5-(1-ethyl-2(1H)-quinolinylidene)-1,3-pentadienyl]-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

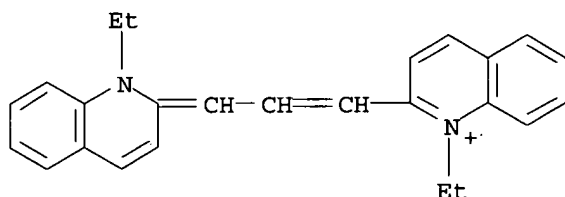
L29 ANSWER 74 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN  
ACCESSION NUMBER: 1920:13969 HCAPLUS  
DOCUMENT NUMBER: 14:13969  
ORIGINAL REFERENCE NO.: 14:2587f-h  
TITLE: Studies in photographic sensitizers  
AUTHOR(S): Mills, W. H.; Pope, W. J.  
SOURCE: Chemical Age (London) (1920), 2, 633  
CODEN: CHAGAN; ISSN: 0305-6465  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB These papers deal with the isocyanines, of which the best known representatives are pinaverdol and sensitol green, and with the carbocyanines, best represented by pinacyanol and sensitol red. The isocyanines result from the condensing action of an alkali hydroxide on a mixture of a quinoline alkali iodide. The dyes of the sensitol red class



were produced by the condensation of 2 mols. of a quinaldine alkali iodide with 1 of HCHO under the influence of alkalies. The practicable variations in constitution are fewer than in the case of the isocyanines. Many spectrographs and details of preparation are given, for which the original paper must be consulted. Apparently the type distinction between the isocyanines and the carbocyanines lies in the coupling of the 2 quinoline residues by the link :CH-in the former, and the conjugate chain :CH.CH:CH in the latter. In carbocyanines, the multiplication of the number of units of the constitution :CH was accompanied by an extension of the sensitizing far into the red region of the spectrum. A lengthening of the characteristic :CH.CH:CH chain of the carbocyanines, if possible, may bring still greater increase of infra-red sensitiveness.

IT 605-91-4, Pinacyanol  
(as photographic sensitizer)  
RN 605-91-4 HCAPLUS  
CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-, iodide (9CI) (CA INDEX NAME)



● I<sup>-</sup>

L29 ANSWER 75 OF 75 HCAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1920:13968 HCAPLUS

DOCUMENT NUMBER: 14:13968

ORIGINAL REFERENCE NO.: 14:2587f-h

TITLE: Studies in photographic sensitizers

AUTHOR(S): Mills, W. H.; Pope, W. J.

SOURCE: Photographic Journal (1920), 60, 183-201

CODEN: PHOJA7; ISSN: 0031-8736

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

AB These papers deal with the isocyanines, of which the best known representatives are pinaverdol and sensitol green, and with the carbocyanines, best represented by pinacyanol and sensitol red. The isocyanines result from the condensing action of an alkali hydroxide on a mixture of a quinoline alkali iodide. The dyes of the sensitol red class were produced by the condensation of 2 mols. of a quinaldine alkali iodide with 1 of HCHO under the influence of alkalies. The practicable variations in constitution are fewer than in the case of the isocyanines. Many spectrographs and details of preparation are given, for which the original paper must be consulted. Apparently the type distinction between the isocyanines and the carbocyanines lies in the coupling of the 2 quinoline residues by the link :CH-in the former, and the conjugate chain :CH.CH:CH in the latter. In carbocyanines, the multiplication of the number of units of the constitution :CH was accompanied by an extension of the sensitizing far into the red region of the spectrum. A lengthening of the

characteristic :CH:CH:CH chain of the carbocyanines, if possible, may bring still greater increase of **infra-red** sensitiveness.

IT 605-91-4, Pinacyanol

(as photographic sensitizer)

RN 605-91-4 HCAPLUS

CN Quinolinium, 1-ethyl-2-[3-(1-ethyl-2(1H)-quinolinylidene)-1-propenyl]-, iodide (9CI) (CA INDEX NAME)

